

AGRARIAN CHANGE
IN LOWLAND SCOTLAND
IN THE SEVENTEENTH CENTURY

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ABSTRACT

This study considers the changes which occurred in the agrarian economy of Lowland Scotland during the seventeenth century. It tests the two hypotheses which have formed the basis of all previous work on Scottish agriculture. The first of these, which has been generally accepted until recently, was that prior to the Agricultural Revolution in the eighteenth century, Scottish agriculture was in a backward state. Farming was considered to have been at a subsistence level and to have been stagnant, if not actually in decline, during the seventeenth century. The second hypothesis, which has only been formulated in recent years and which was not backed by a large body of evidence, stated that there had been a significant degree of development in Scottish agriculture during this period.

The limitations of previous work are first examined and the most likely source material for a study of seventeenth century agriculture in Scotland is identified. The delimitation of the study area and the time period are then discussed.

Using the sources which have proved to be most informative, a series of themes is then developed. Each chapter considers a different aspect of the agrarian economy in which development can be demonstrated. In each chapter, the significance of the theme is discussed and previous ideas considered. Changes through time are then studied and, as far as possible, regional differences are brought out and explained. The themes are closely interrelated and, when taken together, build up a picture of dynamic

change in the rural economy of Lowland Scotland during this period.

The second hypothesis is thus confirmed and the first one refuted.

The principal contribution of this study is towards the further understanding of the seventeenth century as a major formative period in the economic development of Scotland and secondly, to the study of the processes involved in the change from subsistence to commercial agriculture.

DECLARATION

This thesis has been composed by the undersigned
and is based on his own research

Ian D Whyte

22nd May 1974

Ian D. Whyte

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CONTENTS

	Page
Title	i
Dedication	ii
Abstract	iii
Declaration	v
Acknowledgements	vi
Contents	vii
List of Maps	ix
List of Tables	xi
List of Figures	xii
List of Abbreviations	xiii
Note of Manuscript References	xv
 <u>INTRODUCTION</u>	 1
 <u>PART I THE BACKGROUND TO AGRARIAN CHANGE</u>	
Chapter 1 Estate Management	37
Chapter 2 Parliamentary Legislation	70
 <u>PART II CHANGES IN AGRICULTURAL PRACTICES</u>	
Chapter 3 The Maintenance of Soil Fertility	112
Chapter 4 Two Facets of a Developing Economy: The Droving Trade and the Expansion of the Arable Area	170
Chapter 5 The Development of Enclosure	206
 <u>PART III CHANGES IN AGRICULTURAL ORGANISATION</u>	
Chapter 6 Leases and Tenure	247
Chapter 7 Farm-Structure	280
 <u>PART IV CHANGES IN MARKETING</u>	
Chapter 8 The Marketing of Agricultural Produce	328
Chapter 9 The Grain Trade and the Edinburgh Market	371
 <u>CONCLUSION</u>	 412

	Page
Appendix I Some Significant Dates in Scottish History 1560-1707	419
Appendix II Glossary of Some Seventeenth-Century Terms used in this Thesis	421
Appendix III List of Manuscript Estate Collections Consulted	425
Appendix IV List of Printed Seventeenth-Century Sources Consulted	430
Appendix V List of Post-Seventeenth-Century Works Consulted	436

LIST OF MAPS

Map	Page
1 Lowland Scotland - Relief	16
2 Lowland Scotland - Counties	19
3 Lowland Scotland - Natural Regions	21
4 Lowland Scotland - Coverage of Estate Documents	25
3.1 Distribution of the Use of Seaweed	118
3.2 Distribution of Paring and Burning	121
3.3 Distribution of Workable Limestones	128
3.4 The Occurrence of Liming	130
3.5 The Cultivation of Wheat	145
3.6 The Cultivation of Rye	147
3.8 Distribution of Improved Crop Rotations	153
4.1 The Droving of Cattle	176
4.2 The Droving of Sheep and the Edinburgh Market Area for Meat	178
4.3 The Expansion of the Arable Area	187
4.4 Divisions of Commonly	191
4.5 Shortages of Peat	199
4.6 The Use of Coal	203
5.1 Enclosures for Planting	216
5.2 Enclosures for Livestock and Hay	229
5.3 Enclosures for Arable	232
5.4 Distribution of Enclosures of All Types	242

Map	Page
6.1 Distribution of Longer Leases 1651-1707	268
6.3 Distribution of Steelbow Tenure	276
7.1 Percentages of Single-Tenant Farms per Parish in Aberdeenshire	289
7.2 Aberdeenshire - Relief	289
7.3 Percentages of Single-Tenant Farms	292
7.4 Distribution of Consolidated Holdings	308
7.5 Consolidation of Proprietary and Tenant Runrig	313
7.6 Average Sizes of Holdings in Oxgangs	320
8.1 Estates on which Rents were Paid in Grain	331
8.2 Estates on which Rents were Paid in Money	332
8.3 Estates on which Rents were Paid in Grain and Money	333
8.4 Market Centres in 1600	354
8.5 Access to Market Centres in 1600	356
8.6 Burghs of Barony Erected 1600-1650	359
8.7 Burghs of Barony Erected 1651-1707	361
8.8 Non-Burghal Markets Established 1660-1707	362
8.9 Market Centres in 1707	364
8.10 Access to Market Centres in 1707	365
8.11 Commutation of Rents in Kind	368
9.1 East-Coast Estates Involved in the Grain Trade	377
9.2 The Edinburgh Market Area for Grain	392
9.3 The Aberdeen Market Area for Grain	404
9.4 The Dundee Market Area for Grain	405
9.5 The Montrose Market Area for Grain	406

LIST OF TABLES

Table	Page
2.1 Summary of the Late Seventeenth-Century Improving Statutes	86
2.2 Instances in the Records of the Privy Council where the 1661 Act for Diverting Roadways to facilitate enclosure was used	90
3.1 Cropping Systems on Limed and Unlimed Outfields	136
3.2 The Effects of Lime on Acid Soils in Hertfordshire	137
3.3 Increases in Rents due to Liming, from the 1627 Reports	139
3.4 Calculated Approximate Average Yields for some East-Coast Estates	160
3.5 Crop Yields on the Dundas Estates 1655-1662	165
4.1 Numbers of Cattle Driven Across the Border to England	180
4.2 Numbers of Sheep Driven Across the Border to England	181
4.3 Seventeenth-Century Divisions of Commonly	194
4.4 Restrictions on the Use of Peat	200
6.1 Percentage of Tenants with Written Leases on Certain Estates	256
7.1 Percentage of Single-Tenant Farms on Estates by Rent Structure	294
7.3 Analysis of Holdings of one Ploughgate and Larger	323
8.1 Size of Drovers Crossing the Border to England: South Borders Precinct	340
8.2 Quantities of Grain Sold to the Tenants on the Panmure Estates	350
9.1 The Carriage of Grain to Market Centres by Tenants	376
9.2 Recorded Shipments of Grain from the North-East	395
9.3 Export of Grain from Scotland 1st November 1684 - 31st October 1685	402

LIST OF FIGURES

Figure	Page
1.1 The Hierarchy of Estate Management	40
2.1 The Occurrence of Statutes Relating to Agriculture from the Fifteenth to the Seventeenth Century	107
3.1 The Traditional System of Maintaining Soil Fertility	115
6.1 Numbers of Written Tacks surviving for each Decade	254
6.2 The Format of a Typical Seventeenth-Century Lease	262
6.3 Percentage of Long and Medium-Length Leases Surviving for each Decade	265

LIST OF ABBREVIATIONS

Ag.H.R.	Agricultural History Review
A.P.S.	Acts of the Parliaments of Scotland
D.N.B.	Dictionary of National Biography
Ec.H.R.	Economic History Review
Geogr.Ann.	Geografiska Annaler
H.M.S.O.	Her Majesty's Stationery Office
I.B.G.	Institute of British Geographers
Misc.Scot.Burgh Rec.Soc.	Miscellany of the Scottish Burgh Record Society
NL.MS.	National Library of Scotland Manuscript Collection
O.S.A.	Old Statistical Account of Scotland
P.R.O.	Public Record Office
P.S.A.S.	Proceedings of the Society of Antiquaries of Scotland
R.C.A.M.	Royal Commission for Ancient Monuments
R.P.C.	Register of the Privy Council of Scotland
Scot.Burgh Rec.Soc.	Scottish Burgh Records Society
Scot.Stud.	Scottish Studies
S.G.M.	Scottish Geographical Magazine
S.H.R.	Scottish Historical Review
S.H.S.	Scottish History Society
S.N.D.	Scottish National Dictionary
S.R.O.	Scottish Record Office

Trans.Dum. & Gall.Nat.Hist.Soc.

Transactions of the Dumfries and Galloway Natural
History Society

Trans.East Loth.Antiq.& Field Nat.Soc.

Transactions of the East Lothian Antiquarian and
Field Naturalist Society

Trans.Glas.Arch.Soc.

Transactions of the Glasgow Archaeological Society

Trans.I.B.G.

Transactions of the Institute of British Geographers

NOTE ON MANUSCRIPT REFERENCES

Manuscript references have been given as fully as possible, but due to the different systems of cataloguing employed in the Scottish Record Office, it has not always been possible to locate them exactly. Manuscripts in inventoried collections (see Appendix III) are generally listed individually or in small bundles in which individual documents can be readily located. The same usually applies to manuscripts in the National Library of Scotland. Where handlisted collections (see Appendix III) are involved, it has generally only been possible to give the box number in which the document occurs, and sometimes the bundle number. It is not possible to locate them more precisely. As an aid to identification, as well as to place them more firmly in a temporal context, the dates of manuscripts have been added in brackets where possible.

INTRODUCTION

PART 1 THE PROBLEM AND THE PURPOSE OF THE STUDY

Studies of Scotland's past have tended to concentrate upon political history. This may be attributed in part to the poverty of the source material compared to that of England. It is also a reflection of the early stage of development of Scottish historical studies and of the limited number of people who have worked in the field. There has been a general lack of research into the social and economic background against which political events took place. It is perhaps in this particular area that historical geographers, with their spatially-orientated approach, can make their most valuable contribution. However, research into the historical geography of Scotland has lagged conspicuously behind similar work in England and is still in many respects at a pioneer stage.

The social and economic studies which have been undertaken have tended to focus upon the eighteenth century and later. The sources for this period are relatively abundant and a high proportion of them exist in printed rather than manuscript form. There has been very little attempt as yet to push the frontiers of knowledge further back into the past. The seventeenth century in particular has received little direct attention. It is only within the last decade that attention has begun to be directed towards the nature of the seventeenth-century Scottish economy.

Pioneer works in this field were the studies of Lythe and Smout (1). These tended to focus very much upon trade and Scottish mercantile organisation. Recently, more general historical studies, such as that of Michison (2), have emphasised the importance of the seventeenth century as a transition period from a medieval to a modern society. This century is now seen as a major formative period for the subsequent history of the country. It is significant that Michison devotes 156 pages out of 425 to a discussion of the period between the Union of the Crowns in 1603 and the Union of the Parliaments in 1707 (3).

However, agriculture, despite its fundamental importance as the basis of all pre-Industrial Revolution societies, has not received a great deal of attention for any period before the eighteenth century in Scotland. As will be discussed below, the seventeenth century has been treated in a particularly superficial manner. Most detailed studies have concentrated upon the period of the Agricultural Revolution. This is generally considered to have occupied the second half of the eighteenth century, with faltering beginnings in the period c1720-50, and is usually taken to have been more or less complete by the end of the first quarter of the nineteenth century. There are very good reasons for this emphasis. Firstly, there is a large quantity of readily accessible printed source material which is relevant to the study. There are the writings of the agricultural improvers themselves. Complete coverage of the country at parish level is available

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1. Lythe S.G.E. *The Economy of Scotland in its European Setting 1550-1625* (1960)
 - Smout T.C. *Scottish Trade on the Eve of the Union, 1660-1707* (1963)
 2. Michison R. *A History of Scotland* (1970)
 3. Ibid.

in the form of two Statistical Accounts for the late 1790s and late 1820s. There is a considerable volume of commentary upon the state of agriculture in the form of the county reports of the Board of Agriculture dating from the end of the eighteenth and the beginning of the nineteenth century. In addition, this is an area of study in which fieldwork can make a significant contribution. The survival of a large body of manuscript estate maps allows the documentary sources to be linked to features in the present-day landscape. Perhaps because of the obvious geographical element inherent in such material, it is here that historical geographers have made their principal contribution. Manuscript evidence is also abundant for this period. However, even this source is far from having been fully exploited.

It cannot be doubted that the Agricultural Revolution was of profound importance. The Scottish landscape and agrarian economy were drastically altered within the space of two or three generations, and an impressive array of improvements in agricultural techniques and organisation were introduced. Changes in rural society were also considerable and had far-reaching effects.

By contrast, the study of agriculture in earlier periods has been neglected both by historians and by historical geographers. This has been largely due to the widespread assumption that there was insufficient evidence of any sort to enable such an analysis to be made. The poverty of the field evidence relating to periods before the eighteenth century in Scotland is well known (4). The present Scottish rural landscape is one of revolution rather than evolution, as Caird has stressed (5). In the course

4. Fairhurst H. The Archaeology of Rural Settlement in Scotland
Trans. Glas. Arch. Soc. XV part iv (1967) p.139

of this revolution, most of the field evidence of the pre-existing systems was swept away. There is no possibility of undertaking studies of relict features in the way that is possible in parts of England where agrarian change has been a more continuous and less devastating process from at least Tudor times onwards. It is a curious fact that more is known about rural settlement in Scotland during the Iron Age than during the seventeenth century (6). Archaeologists have tended to concentrate their attention upon other periods. In addition, the impermanence of the materials with which most pre-eighteenth-century buildings appear to have been constructed, and the difficulty of dating them, have proved major stumbling blocks (7). One of the very few settlement sites to which a seventeenth-century date can be confidently assigned was only dated by the chance find of a fragment of clay pipe (8). Parry has recently demonstrated that some knowledge can be gained from intensive field studies of relict features at the former margin of cultivation, particularly where the evidence can be tied in with documentary sources (9). However, in general, field work can probably be ruled out as a means of exploring pre-eighteenth-century agriculture.

It has usually been assumed that documentary evidence relating to agriculture in the seventeenth century was very limited in its extent.

The writings of a couple of late seventeenth-century agricultural

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5. Caird J.B. *The Making of the Scottish Rural Landscape* S.G.M. LXXX (1964) pp.72-80
 6. Fairhurst H. (1967) *op.cit.*
 7. Fairhurst H. *Scottish Clachans* S.G.M. LXXVI (1960) p.71
 8. Dunbar J.G. and Hay G. *Excavations at Lour, Stobo* P.S.A.S. 94 (1960-61) pp.196-210
 9. Parry M.L. *Changes in the Upper Limit of Cultivation in South East Scotland 1600-1900* Unpublished Ph.D. thesis, University of Edinburgh (1973)

improvers, the accounts of a few travellers in Scotland and some isolated published court books appear to have been looked upon as comprising the principal sources. Again, curiously, more is known about agriculture on the Medieval monastic estates than during the seventeenth century. The chartularies and records of the administration of the lands of many monasteries were published during the nineteenth century. They form a compact and readily assimilable corpus of material which has been exploited by a few writers, such as Franklin and Symon (10). Because of the lack of a clearly defined body of sources on agriculture between the Reformation and the eighteenth century, there has been a reluctance to consider the period at all. This has in turn led to a tendency to treat it as an unimportant interlude. For instance, Franklin has no real chapter on the seventeenth century in his history of Scottish agriculture. After ten chapters on monastic agriculture he leapfrogs to a discussion of the eighteenth-century improvers after a brief, rather messy section of only eight pages in which a few isolated sixteenth and seventeenth-century rentals are considered (11). Symon, in his more recent history of Scottish farming, briefly dismisses the seventeenth century in a chapter significantly entitled "Before the Dawn" (12). He depicts the period as one of stagnation and inefficiency in agriculture which contrasted sharply with the achievements of the succeeding century.

In both these cases, and indeed in many other works, the scantiness with which the seventeenth century is treated appears to have been due

10. Franklin J.B. *A History of Scottish Farming* (1952)
Symon J.A. *Scottish Farming* (1959)

11. Franklin J.B. (1952) *op.cit.*

12. Symon J.A. (1959) *op.cit.*

to a reluctance to examine, or even to search for, primary manuscript sources such as rentals which require a lot of effort for a relatively small return. In general works such as those referred to above, this reluctance is understandable, although it is potentially dangerous.

Agriculture in the later eighteenth century, as has been mentioned above, is well described by a large quantity of printed source material in which the information is presented in a relatively compact and lucid manner. Very few of the published sources relating to agriculture in the seventeenth century could be described in this way. Most of them were not even directly concerned with describing the agrarian economy. One of the most obvious and most frequently quoted of such sources, the accounts of contemporary English and foreign travellers in Scotland (13), is the most difficult to assess. No allowance appears to have been made for possibly misleading chauvinistic bias in such accounts.

However, the quantity of manuscript source material which is capable of shedding light upon seventeenth-century agriculture has been consistently underestimated, as will be discussed below. It does not form an obviously homogeneous body of material and is often difficult to locate and analyse. Some of the most important categories of sources have been overlooked until recently. Due to this problem there has been an unfortunate tendency to rely upon later secondary sources for the study of seventeenth-century agriculture. The authors of treatises on agriculture in the eighteenth century were uniformly scathing in their contempt of the old system. However, they had a case to prove and a public to influence.

13. Usefully collected in P. Hume Brown, *Early Travellers in Scotland* (1891)

It would not be unreasonable to suppose that they, in common with other writers of propaganda, would have supported their arguments by the careful selection, and possibly even the distortion, of evidence. It would have been natural for these writers to have picked upon the worst practices of their predecessors with which to contrast their own improved methods.

Many of the late eighteenth and early nineteenth-century commentators on agriculture, such as the writers of the Board of Agriculture county reports, described the state of the agrarian economy in the early part of the eighteenth century. The majority of their comments have been accepted uncritically by writers such as Handley (14). This has occurred despite the fact that the writers of such reports were not necessarily well-informed or particularly critical themselves. In most cases, even if they had possessed the inclination to do so, they could not have had access to large bodies of seventeenth and early eighteenth-century documentary sources in the way which is possible today with the centralisation of such records. Hearsay and tradition appear to have been their major sources of information, sometimes by their own admission (15). The dangers of placing any great reliance upon this type of material are obvious.

Another potential source of error which seemed likely to have arisen from the use of secondary sources to reconstruct agriculture in the seventeenth century was the use of descriptions of relict features and systems in the late eighteenth-century landscape. The writers of this period

14. Handley J.E. *Scottish Farming in the Eighteenth Century* (1953) pp.9-90

15. Eg. Buchan-Hepburn G. *A General View of the Agriculture and Rural Economy of East Lothian* (1794) p.20, 28

frequently referred to obsolescent features and practices in some detail, contrasting them with the modern improved systems which had lately been introduced. However, in many cases it appears to have been assumed by modern writers that the relict systems had invariably been widespread at an earlier date. This occurred despite the fact that the areas in which these antiquated features occurred were often marginal during the late eighteenth century and had presumably been so in earlier times.

The result of this reliance upon secondary sources which were potentially ill-informed and biased regarding the agricultural systems which had operated at earlier periods is that modern writers have tended to adopt the same point of view as the eighteenth-century improvers. This is evident from the emphasis on the primitive and backward nature of pre-improvement agriculture by such writers as Handley and Graham (16). However, at this point it is appropriate to summarise the model of agricultural development in Scotland which has been constructed by previous workers in this field from the sources described above.

Scottish agriculture prior to the Agricultural Revolution was generally considered to have been in a stagnant condition or even to have deteriorated from a peak during the thirteenth and fourteenth centuries (17). At this time, under the influence of the monastic orders, the reclamation of land from the waste was widespread and the organisation of the monastic estates was thought to have reached a high degree of efficiency (18). The achievements of the monastic orders were believed to have finally

16. Handley J.E. (1953) *op.cit.*

Graham H.G. *The Social Life of Scotland in the Eighteenth Century* (1937)

17. Handley J.E. (1953) *op.cit.* p.11

18. Franklin J.B. (1952) *op.cit.* pp.iv-vii

foundered at the Reformation in 1560, following a period of decline associated with the alienation of church lands to lay proprietors whose standards of husbandry and organisation were considered to have been inferior (19).

Agriculture during the seventeenth and early eighteenth centuries was seen as having existed at a low level of efficiency on a more or less subsistence basis (20). Regional specialisation was thought to have been minimal due to the prevalence of subsistence farming (21), and the basic structure and organisation of agriculture was visualised as having been uniform over the whole country (22). The incapacity of the system of farming was thought to have been reflected in periodic disastrous famines resulting from harvest failure (23). Writers such as Lamb linked the supposed miserable state of agriculture with a progressive long-term climatic deterioration culminating in an appalling succession of bad harvests during the 1690s which so impressed themselves upon the popular imagination that they survived in tradition as the "Seven Ill Years" (24). The widespread famines which were consequent upon these harvest failures were considered to have underlined the inefficiency of Scottish agriculture.

It is not necessary to discuss in detail the views which were held regarding the primitive nature of farming practices and the organisation of agrarian society. These have been admirably summed up by Handley in his account of the state of agriculture at the opening of the eighteenth

19. Parry M.L. (1973) *op.cit.* p.210

20. Handley J.E. (1953) *op.cit.* pp.16-24

21. *Ibid.*

22. Hamilton H. *An Economic History of Scotland in the Eighteenth Century* (1963) p.44

23. Graham H.G. (1937) *op.cit.* Ch.5

24. Lamb H.H. *Climatic Change* (1966) p.164

century (25). The picture which he presents is a dismal one. According to the accepted view Scotland, suffering from a multitude of economic disasters which had piled up in the late 1690s, entered the Union in 1707 at her lowest ebb (26). The effects of these crises were so bad that the benefits of the Union did not begin to make themselves felt for fully two generations (27). Following this, the light of improvement dawned and the whole agrarian economy, which had been stagnant or virtually moribund until then, was revolutionised in the space of a mere fifty or sixty years (28).

There were however, grounds for believing that this model might be an over-simplified one. Recent work in England has tended to modify the traditional concept of the Agricultural Revolution as a period of rapid development occurring principally during the eighteenth and early nineteenth centuries. The idea of the revolution itself has not been discredited, but the period over which it took place has been extended. Kerridge has now shown that some of the most significant innovations in agricultural techniques were becoming widespread during the late sixteenth and early seventeenth centuries (29). This has prompted a reassessment of the contribution of the eighteenth and nineteenth centuries towards agrarian change. They now tend to be viewed as the final part of an accelerating continuum which extended over more than three centuries.

25. Handley J.E. (1953) *op.cit.*

26. Smout T.C. *A History of the Scottish People 1560-1830* (1969) pp.224-225

27. *Ibid.* p.226

28. Adams I.H. *The Disappearance of Runrig in Scotland*. Paper presented to the Institute of British Geographers, Agrarian Landscape Research Group Conference, Carberry Tower (1969) p.4

29. Kerridge E. *The Agricultural Revolution* (1967)

It seemed possible that an analagous situation might have occurred in Scotland. It was admitted from the outset that agrarian change had been far more sweeping in Scotland during the eighteenth and early nineteenth centuries than in England. The large body of evidence which pointed to the speed with which the face of Scottish agriculture changed during this period could not be dismissed. However, it was felt that there might have been a more gradual takeoff, to use Rostow's model of economic growth (30), which might have extended back into the seventeenth century. This could have been obscured by the lack of work on primary source material and the heavy reliance upon potentially biased or misleading secondary sources. In a recent paper, Carter has suggested that a period of slowly accelerating growth which was succeeded by one of rapid development would inevitably seem reactionary by comparison and might eventually come to be viewed as having been stagnant (31). It was thought that this was possibly the case with Scottish agriculture during the seventeenth century.

There were some indications that this might have been so among the more obvious published sources. Smout and Fenton, in an important paper (32), had reviewed this evidence and had concluded that there had in fact been a significant degree of development in the agrarian economy during this period. They cited the introduction of liming, the rapid growth of rural trading centres in the late seventeenth century, and the expansion of the export trade in grain as proof of this (33). These suggested that

30. Rostow W.W. *The Stages of Economic Growth* (1960)

31. Carter I. *Economic Models and the Recent History of the Highlands* Scot.Stud.15 (1971) p.101

32. Smout T.C. and Fenton A. *Scottish Agriculture Before the Improvers - an Exploration* Ag.H.R. 13 (1965) pp.73-93

33. Ibid. pp.82, 79 and 76

Scottish agriculture was neither static or in decay, but was in fact slowly developing during the seventeenth century. They thought that previous writers had laid too much stress upon the crop failures of the 1690s, which might have resulted from uniquely severe short-term weather conditions, and did not necessarily point to the gross inefficiency of the agrarian system.

In addition to this there was also a well-known series of statutes passed by the Scottish Parliament between 1660 and 1695 for the encouragement of agricultural improvement. These acts had been reviewed by several writers (34), most of whom had come to the conclusion that they had been largely ineffectual. Nevertheless, the background to this legislation had never been explored, and it seemed on the face of it unlikely that such a policy should have been pursued without at least some encouragement that it might be utilised. Also, it did not seem entirely likely that, during a period which was characterised above all by slow, if sometimes faltering, change in many aspects of society, agriculture should have remained static. The work of some historical geographers has demonstrated that an element of dynamic change in agriculture could be discerned at the start of the eighteenth century (35), and it seemed possible that this trend might have had its origins in the seventeenth century.

34. Eg. Adams I.H. The Division of the Commonty of Hassendean 1761-1763 Stair Society Miscellany I 1971 pp.172-176

Caird J.B. (1964) *op.cit.* p.74

Hamilton H. (1963) *op.cit.* p.57

35. Eg. Third B.M.W. The Changing Rural Landscape of the Scottish Lowlands 1700-1820 Unpublished Ph.D. thesis, University of Edinburgh (1953)

Dodgshon R.A. Agricultural Change in Roxburghshire and Berwickshire 1700-1850 Unpublished Ph.D. thesis, University of Liverpool (1969)

There thus appeared to be a need to examine the primary sources relating to agriculture in Scotland during the seventeenth century. It was felt that the established model of agrarian development stated directly by writers like Franklin and Symon (36) and implied by workers on the eighteenth century such as Handley and Graham (37), was far from being convincing. The source material which had been used was open to question regarding its reliability and this in turn cast doubts upon the hypotheses which had been formulated from it. However, it was felt that the alternative theory which had been proposed by Smout and Fenton (38), was not backed by a sufficient body of evidence to be immediately acceptable.

The purpose of this study was firstly to locate the most relevant and reliable primary source material relating to seventeenth-century agriculture in Scotland. Secondly, it was hoped that an analysis of this material would allow a reconstruction in some depth of the agrarian economy of the period with its regional specialisations and interactions. Thirdly, it was thought that this reconstruction might be sufficiently detailed to provide a clear indication of the extent or otherwise of agrarian change during the period. This evidence would either confirm the traditional view that agriculture was stagnant during this period or would lend support to the alternative hypothesis involving a degree of agrarian change. The verification of one or other of these hypotheses, or the erection of a new one based on the findings of the research, was considered to be the fundamental purpose of the study.

36. Franklin T.B. (1952) *op.cit.*

Symon J.A. (1959) *op.cit.*

37. Handley J.E. (1953) *op.cit.*

Graham H.G. (1937) *op.cit.*

38. Smout T.C. and Fenton A. (1965) *op.cit.*

PART 2 THE SPATIAL AND CHRONOLOGICAL FRAMEWORK

The area

At the outset, it was decided to conduct the study over as wide an area as possible. It was felt that a regional study in depth similar to the one undertaken by Dodgshon for Roxburghshire and Berwickshire for the eighteenth century (39) was inappropriate. Given the basic lack of knowledge, it was thought that a broader survey was of potentially greater value and was more consistent with a geographical treatment. The possible dangers of superficiality resulting from the study of too large an area were borne in mind however.

It proved impracticable to include the whole of Scotland. Firstly, the scale of the undertaking was too great to allow sufficient depth of analysis. Secondly, it was suspected and subsequently confirmed that much of the Highlands and Islands was poorly documented at this time in comparison with Lowland Scotland. Moreover, Lowland Scotland was more advanced economically than the Highlands during the seventeenth century. Agrarian change might have been expected to have been more marked and most readily discernible in the former area. It was decided that it would be more meaningful, as well as more feasible, to restrict the study to Lowland Scotland. It then remained to define this area as precisely as possible.

Some studies in regional geography have defined the Lowlands of Scotland in a relatively restricted way as the country lying between the

39. Dodgshon R.A. (1969) op.cit.

Highland and Southern Upland Boundary Faults (40). These major geological divisions run between Helensburgh and Stonehaven on the north and Girvan and Dunbar to the south. However, it was felt that a rigid adherence to the course of two geological faults had little relevance to agrarian history or historical geography. Firstly, the area which was contained within these limits included stretches of upland country which were virtually identical to the Southern Uplands and were similar to many areas along the fringes of the Highlands. Secondly, the area excluded many extensive lowland areas in the North East, the Lower Tweed basin and along the Solway Plain. (Map 1) It was decided that such a division would be impossible to adhere to and was without real meaning from the point of view of the study.

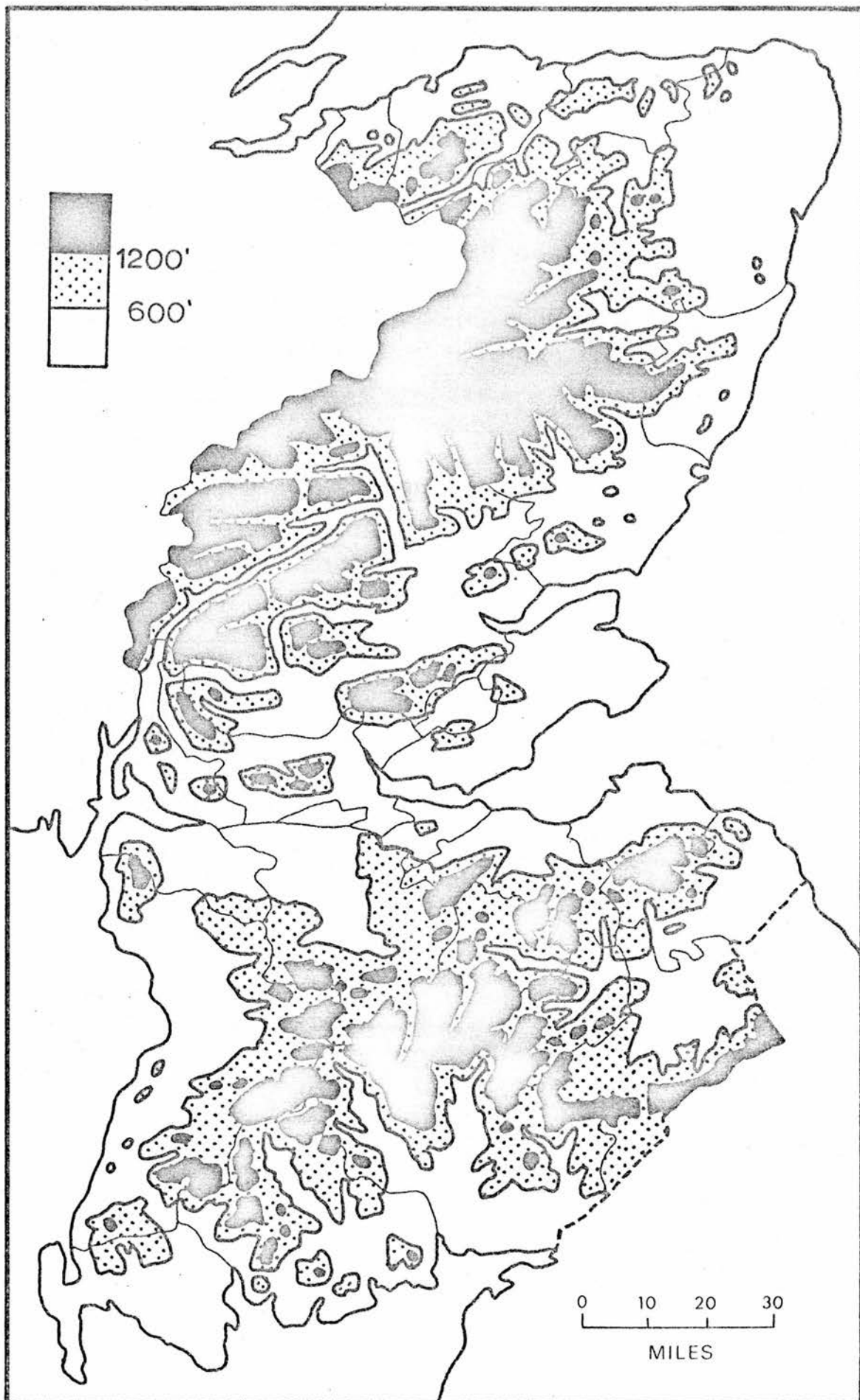
Scottish historians have long recognised that the distinction between Highland and Lowland Scotland which bulks so large in Scottish history was an east-west rather than a north-south division. Dickinson (41) considered that, north of the Forth, Lowland Scotland extended up the east coast in a strip of varying width. This was relatively broad through Angus, narrowing just north of Stonehaven and then opening out into the Aberdeenshire Lowlands before narrowing once more through the Laigh of Moray and running on into Easter Ross. This concept of the boundary between Highland and Lowland Scotland appeared to be much more meaningful than the use of the Highland Boundary Fault.

The problem of delimiting an actual boundary proved to be a difficult

40. Stamp L.D. and Beaver S.H. *The British Isles, A Geographic and Economic Survey* 4th ed. (1954) p.33

41. Dickinson W.C. *Scotland from the Earliest Times to 1603* (1961) pp.5-6

MAP 1 LOWLAND SCOTLAND: RELIEF



one. There appears to have been a fairly sharp cultural, economic and physical transition between Highland and Lowland along the Highland edge between Loch Lomond and the Tay valley. From there northwards however, the Highlands are penetrated by a succession of broad valleys, those of the Tay, the Angus Glens, the Dee, Don and Spey being among the largest (Map 1). These valleys represented wedges of relatively fertile lowland country thrust into the Highlands, and it seemed probable that their agriculture would have had more in common with the lowland plains into which they opened than with the mountain areas into which they ran back. Nevertheless, it seemed unrealistic to distinguish between valley and upland, between Highland and Lowland, along this transition zone on the basis of an arbitrary altitudinal limit. It was found that many estate boundaries paid little attention to such divisions. Estates such as those of Airlie and Gordon, whose principal seats were situated well within Lowland Scotland, included large tracts of country along the transition zone with the Highlands, not only in the glens but over the hill pastures between. It was found that the Highland and Lowland components of such estates were often economically interdependent and could not reasonably be separated without a loss of the spatial interactions which were expected to form an important part of the study. Some of the printed source material which was studied at the outset of the research pointed to a series of linkages between the agrarian economies of the areas on either side of the Highland/Lowland boundary on a macro-scale (42). It

42. Eg. John Major Description of Scotland 1521 in Brown P.H. Scotland before 1700 (1893) p.50

Thomas Morer A Short Account of Scotland, 1689 in Brown P.H. Early Travellers in Scotland (1891) p.268

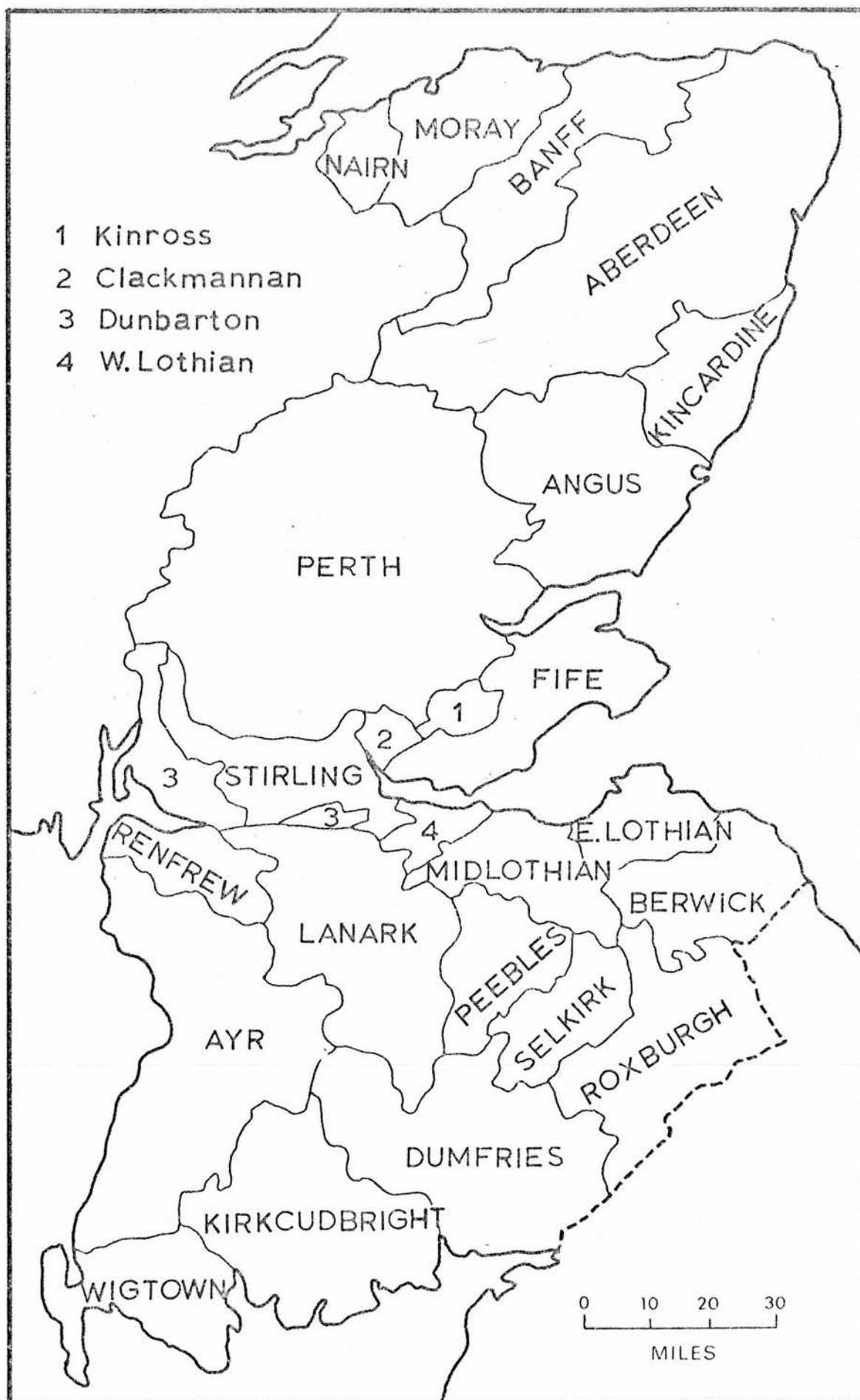
Bishop Leslie History of Scotland 1578 in Brown P.H. Scotland Before 1700 (1893) p.128

was clear that in the seventeenth century, these areas specialised in the production of different ranges of goods which were exchanged with other areas which could not supply their own needs.

In order to avoid excluding these linkages, it was decided that a rigid boundary between Highland and Lowland Scotland could not be meaningfully drawn. Estates which lay exclusively within the Highlands were omitted from the study but the appendages of Lowland estates which lay within the fringes of the Highlands were considered. The administrative framework within which estates operated in the seventeenth century was that of parish and county. Accordingly, county boundaries have been used as a means of drawing an absolute northward and westward limit to the study area (Map 2). However, it must be remembered, when considering the distribution maps in the thesis, that substantial areas of the interior of Dunbartonshire, Stirlingshire, Perthshire and the North-Eastern counties are only of peripheral relevance to the study of agrarian change in Lowland Scotland at this time. Such areas are best suggested by the topographical map (Map 1), which delimits the really mountainous interior areas of these counties which lie beyond the scope of the present work.

When considering the choice of a southward limit to the study area it was decided that no real distinction could be drawn between the "Central Lowlands" and the "Southern Uplands". The hill country of Galloway and the Borders, with their fringing lowland basins, were closely integrated with the lowlands which lay to the north. It was considered that the common cultural heritage, social organisation, and economic orientation of these areas linked them so closely that it was

MAP 2 LOWLAND SCOTLAND: COUNTIES



not justifiable to split them. Accordingly, the term "Lowland Scotland", as used in this thesis, refers to the country between the English border and the Highland boundary as defined above.

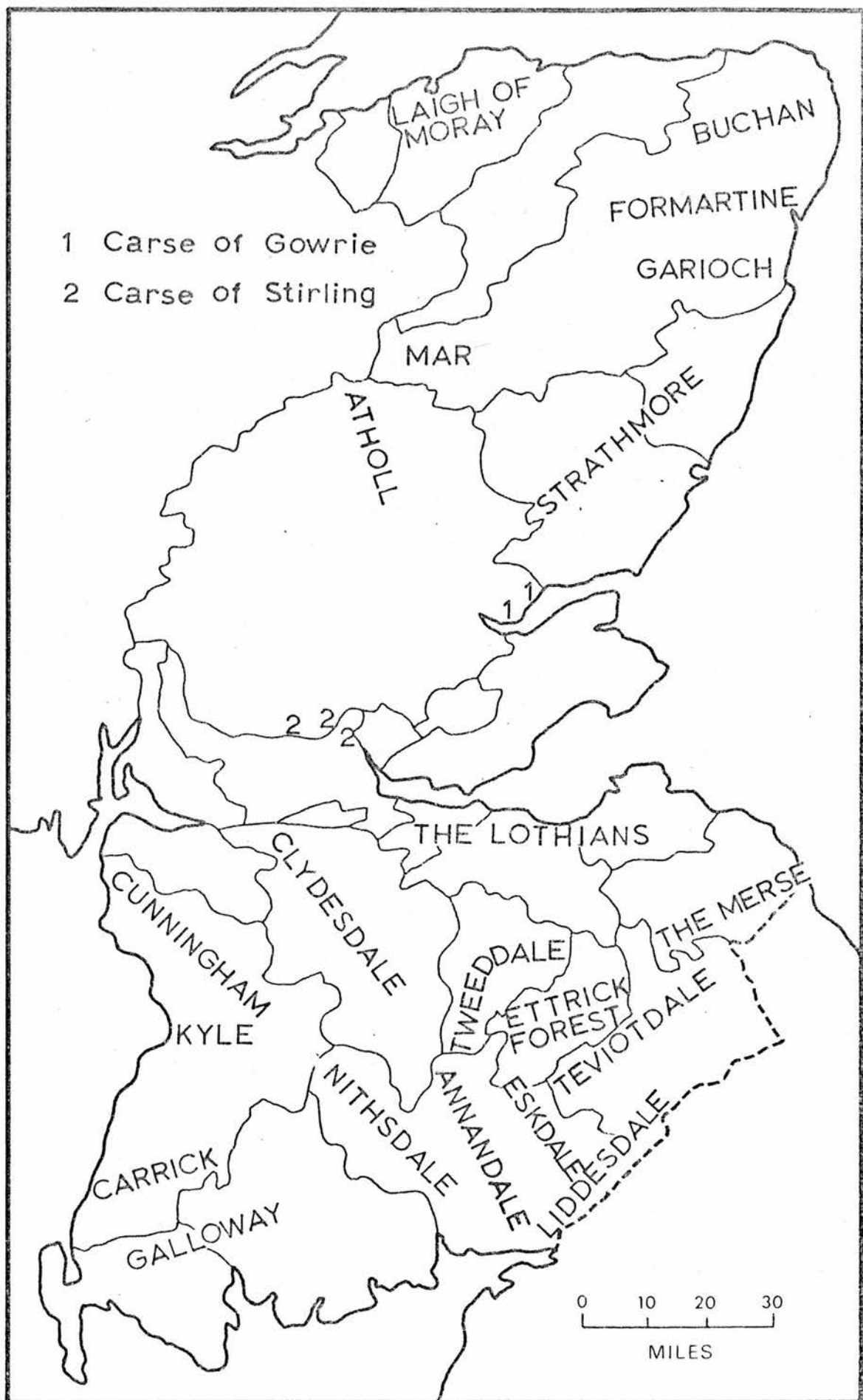
The counties included within the study area are shown on Map 2. However, these administrative boundaries often pay little heed to the natural regions which occur within Lowland Scotland. These regions are frequently far more significant in relation to a study of agriculture than counties and were recognised at an early date. Some of the more important of these natural regions which are referred to in the text are shown on Map 3. It is impossible to define their boundaries precisely and space does not permit a detailed description of their individual characteristics, but some idea of their relation to the physical background can be gained from a comparison with Map 1.

The time period

The choice of specific terminal dates in historical studies has far more relevance to political events than to economic and social history, for in the case of the latter, events tend to form much more of a continuum and it is more difficult to identify significant cut-off dates. Consequently, although this study is concerned with agrarian change in the seventeenth century, no attempt has been made to impose rigid divisions at 1600 and 1699. As the earlier part of the century is less well documented than the later part, it has been considered legitimate to incorporate a small quantity of useful material, such as rentals and court books, dating from the last two decades or so of the sixteenth century.

At the end of the period, the Union of 1707 provides the most

MAP 3 LOWLAND SCOTLAND: NATURAL REGIONS



appropriate date at which to draw the study to a conclusion. Although it was not necessarily apparent to contemporaries, the Union nevertheless marked a major watershed in the political and economic development of Scotland (43). As a result, full-scale documentary analysis has been carried up to this date. The study of selected material up to about 1720 has also been included where the sources concerned refer back to the recent past. For example, the evidence relating to grazing rights which was submitted in some early eighteenth century divisions of commonalty proceedings was taken from elderly men who were looking back a generation or more to the closing years of the seventeenth century (44). Bearing in mind the criticisms that have been made above concerning the inappropriate use of later source material for reconstructing seventeenth-century conditions, sources of this sort have been treated with great care. The quantity of material involved is very small however.

PART 3 THE SOURCE MATERIAL: ITS NATURE AND INTERPRETATION

When the study was commenced, a start was made on the published source material. This covered a wide range of documents and its variety can best be appreciated from Appendix IV. However, it was clear that most of the research would necessarily involve the use of unpublished manuscript sources and the problem was to decide which of these would provide the greatest quantity of information.

43. Smout T.C. (1969) *op.cit.* pp.225-226

44. For example, the dispute over the commonalty of Kirk Yetholm in 1712 (S.R.O. Biel muniments GD 6 826) and the one concerning the commonalty of Hoddam in 1743 (NL.MS. 3085)

In 1960, Donaldson produced a paper in which he discussed the various available sources for the study of Scottish agrarian history prior to the eighteenth century (45). He considered that apart from the Exchequer Rolls, which detailed the income derived from Crown lands, the major likely sources were Records of Testaments, Court Books and Estate Papers (46). The last of these categories was dismissed fairly summarily. In Donaldson's opinion, a substantial corpus of material in estate collections capable of throwing light on pre-eighteenth century agriculture did not exist (47). This perpetuated a view which had been widely held in the Scottish Record Office, namely that collections of private estate muniments were of relatively limited value as historical sources compared to official records (48).

When the sources suggested by Donaldson were examined and sampled it was found that the published Exchequer Rolls for the late sixteenth century provided remarkably little information concerning agriculture. There was no great incentive therefore to consult the early seventeenth century rolls which were still in manuscript. Records of Testaments proved to contain certain information of value in the form of inventories of the possessions of the deceased. However, the main problem in using them was placing them in context. In order to appreciate fully the significance of the lists of goods and gear, including agricultural implements, livestock, stored grain and growing crops, which were contained in these records, it was imperative to discover the social position of the persons

45. Donaldson G. Sources for Scottish Agrarian History Before the Eighteenth Century *Ag.H.R.* 8 (1960), pp.82-92

46. *Ibid.* p.82

47. *Ibid.* p.82

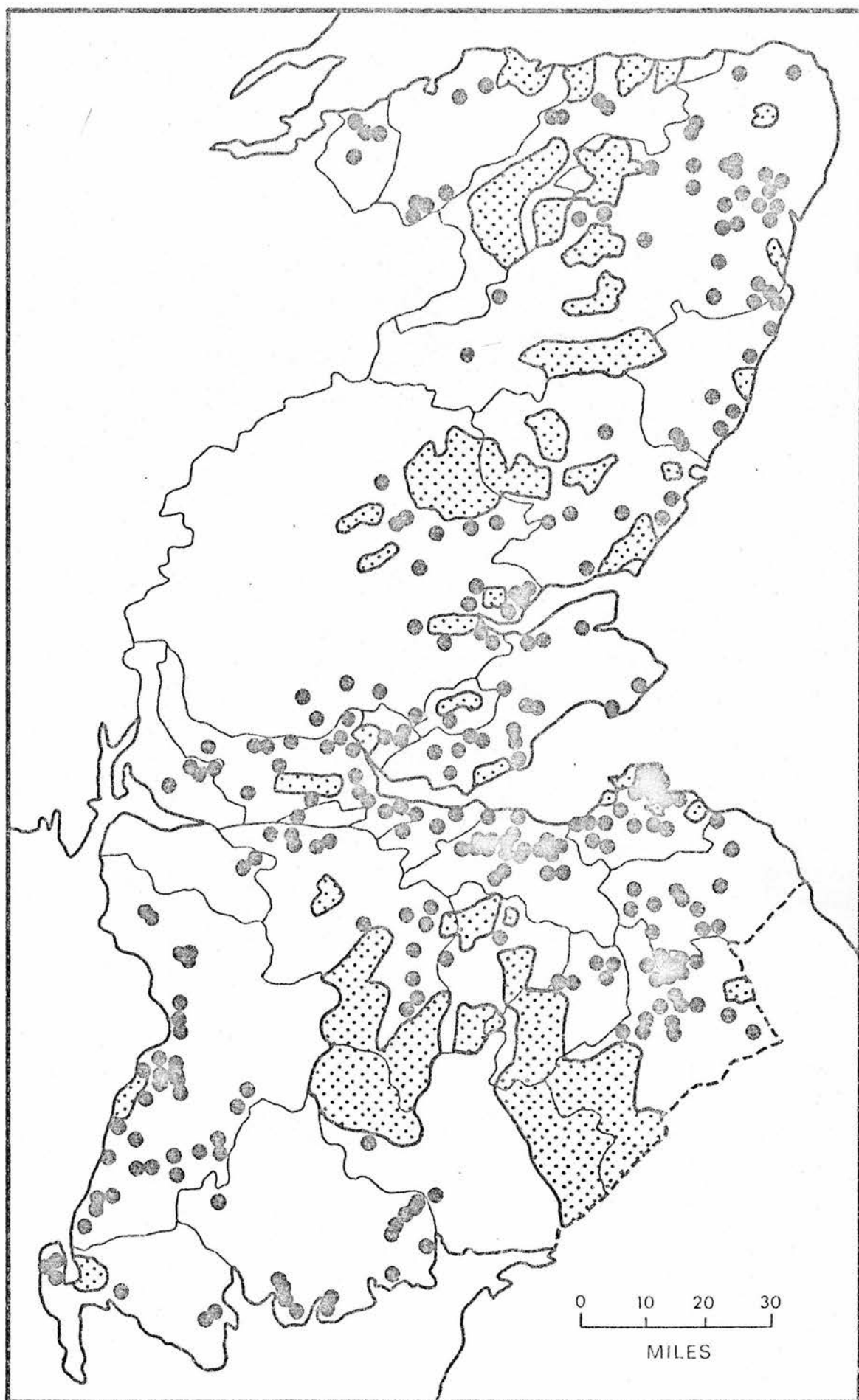
48. Scottish Record Office List of Gifts and Deposits Appendix 6, p.15

involved. It was decided that this could only be done in detail for limited areas where there were plenty of rentals and tacks available to provide the necessary background. It did not seem practicable to pursue this line of inquiry over a wide area and, as this did not fit in with the broad view which was considered to be necessary for the purposes of the study, records of testaments were not used.

Estate papers, of which court books are properly a part, proved to be far more important than had been suggested by Donaldson. It rapidly became obvious that not only did this category of material contain a vast quantity of relevant information, but that it was ideally suited to form the basis of a spatially-orientated survey of agrarian change. It was found that the collections of private muniments which had been gifted to the Scottish Record Office or were deposited there on indefinite loan, with the addition of some supplementary material which had been acquired by the National Library of Scotland, covered most parts of the study area. It was realised from a consultation of the records of the National Register of Archives that the collections of muniments which were lodged in the Scottish Record Office and the National Library formed only a fraction of the material which still remained in private hands. However, the limited amount of time which was available and the problems of access to such private collections made any ideas of consulting them impractical.

It was decided to confine attention to the collections which were available for study in Edinburgh. Some of these had been withdrawn for cataloguing, but a large number had already been inventoried and a high proportion contained material which was relevant to the study. Map 4 shows the coverage which has been obtained from rentals and leases.

MAP 4. COVERAGE OF ESTATE DOCUMENTS



These classes of estate document, apart from being very common, lend themselves to fairly accurate mapping and so have been the basis of most of the distribution maps in this thesis. It can be seen that a fairly good coverage of most of Lowland Scotland has been achieved. Some areas are obviously more sparsely covered than others. For instance there is a dearth of information on Berwickshire, a county in which most of the estate collections still remain in private hands. There is also relatively little data available for some of the western counties such as Renfrewshire and Dunbartonshire. However, it is felt that such gaps do not detract too greatly from the value of the analysis.

Some of the collections of estate muniments in the Scottish Record Office have been properly indexed with each individual document listed and described. Many other collections are only handlisted or roughly catalogued by the box or bundle. The larger indexed collections were studied initially, including the Airlie, Dalhousie, Biel and Leven muniments. These provided a working knowledge of the types of document which were likely to provide most information, and which are considered in more detail below. Consequently, when the smaller indexed collections had been worked through and attention was turned to those which were handlisted, it was possible to eliminate from the study those types of document which had been shown to be either irrelevant to the purposes of the research, or which provided very little information in return for an inordinate amount of work.

Because of this selection process and the difficulty of locating all the most potentially useful material from the broad descriptions used in handlists, it cannot be claimed that all the relevant material in the

collections which are listed in Appendix III has been consulted. Due to the very broad nature of the topic, the size of the study area and the vast quantity of documents involved, this would have been a very long-term undertaking. However, it can be claimed that a very high proportion of the most useful material has been identified, consulted and analysed. This is only a sample of the potential sources which still remain in private hands. However, there are grounds for hoping that it is a fairly representative sample. As Appendix III shows, some eighty individual collections have been consulted, some involving more than one estate. Both large and small estates have been studied. It is hoped that with such a large sample, spread fairly evenly over the study area, the possible aberrations of individual estates will not greatly distort the overall picture. Certainly it was found that once a substantial body of estate papers had been consulted and the basic patterns of the study established, further work merely tended to reinforce the conclusions which had already been reached.

As seventeenth-century estate papers have never been analysed before, it will be advantageous to review briefly the major categories of document which make up these collections and which have been utilised in the present work. The documents in estate collections may be divided into three broad categories: those relating to the possession of property, to finance, and to estate management. These groups are not entirely hard and fast, for some documents such as tacks could conceivably be placed in more than one class. Nevertheless, they are sufficiently distinct to justify the division.

Documents relating to the possession of property make up a large proportion of the material surviving in estate collections. Such documents,

as Elton has noted (49), form the basis of a landed society. They would have been of considerable importance in proving possession long after they had been written and thus they have had a high survival value. The most common types of document in this category, charters and sasines, along with many other classes of formalised legal documents, proved to be of very little use. However, certain restricted types of document such as those concerned with the division of runrig and commonties were very valuable indeed.

Documents relating to finance, apart from those concerned with the wadsetting, or mortgaging of land were likewise of relatively little value. The greater part of the data which has been used in this thesis was drawn from records of estate management. The quality of these varies greatly from collection to collection and there is an unfortunate tendency for them to be sparse for the earlier part of the century. The greater part of the documents in this category fall into a few major classes.

Rentals are lists of the rents due from an estate or portion of an estate. The scantier variety merely list the names of the farms or tenants on the estate and the rents due from them. Fuller rentals may include information about holding size and organisation, or tenure. Because they generally list the farms on a particular estate, they provide the principal means of mapping its approximate extent. For a period when manuscript estate maps do not exist, and where more general surveys such as those of Pont are on too small a scale to be of much use, they are very important.

49. Elton G.R. *England 1200-1640 The Sources of History series* (1969) p.139.

Tacks are leases of land, mills, houses, teinds, fisheries or customs duties. The detailed contents of seventeenth-century tacks of land and the information which may be obtained from them will be considered in Chapter 6.

Accounts The accounts of the management of estates provide information on the type of produce which was available for marketing and often indicate how, and to whom, it was disposed. They are a major source of information on rural marketing and trade (see Chapters 4, 8 and 9). The details of the expenditure incurred in the running of an estate include a lot of data on rural life, though mainly viewed from the point of view of the proprietor.

Court Books The records of local baron and regality courts (see Chapter 1), are relatively abundant and contain a wealth of detail about the everyday life of the tenantry which is not available from other sources. As such courts played a key role in estate administration, their records are a major source of information on estate management.

Factor's memoranda, reports etc. The hurried jottings of estate factors relating to their day-to-day work are of the greatest value. Unfortunately they are among the most ephemeral of estate documents and tend to survive only sporadically among the larger collections. The snippets of information which they provide tend to be of a kind which does not occur elsewhere. Written reports from the factors of estates where the proprietor was an absentee are particularly informative, but they are confined to the large, fragmented estates and are not common.

Inventories and Surveys This category covers a wide range of documents, including verbal descriptions of the extent of estates. These are rare, but

in the absence of estate maps, they are very informative. More common are detailed surveys of tenants' houses and the repairs which were needing attention. These are the best sources for rural housing conditions at this time.

Letters The correspondence between an absentee landlord and his factor provides a most useful source of information relating to the week-to-week preoccupations of running an estate. Correspondence between landowners tends to concentrate heavily on personal and financial affairs. However, it occasionally contains useful references to the wider setting of agriculture, relating for example to trade, prices, politics and weather conditions.

Various other sources came to light which added significantly to the information which was obtained from private estate muniments. The Acts of the Parliaments of Scotland provided the legislative framework already referred to around which much of the evidence for agrarian change can be organised (see Chapter 2). The Register of the Privy Council, besides proving a useful source of information on such topics as the state of trade, law and order and harvest failures, also detailed the more contentious of the disputes which arose as a result of the improving legislation (see Chapter 2). The Exchequer Records of the Border customs precincts formed a basis for reconstructing the late seventeenth-century droving trade (see Chapter 4). The writings of Scottish topographers and English travellers provided a basis for considering regional specialisation in agriculture. A very important category of sources was the work of a small number of late seventeenth century writers on agricultural improvement. Their works have been considered previously as early manifestations of the eighteenth-century improving movement, well-intentioned but ahead

of their time. However, the evidence of other sources allowed them to be placed more firmly in their seventeenth-century context (see Chapter 3).

The question of the bias which might be inherent in these sources must be considered. It is possible to classify the documentary evidence relating to seventeenth-century agriculture in Lowland Scotland into two principal groups. Direct source material was designed for the specific purpose of conveying information about agriculture, either to contemporaries or to posterity. Among this class may be included the work of seventeenth-century travellers, historians and writers of treatises on agriculture. The authors of these all had a particular standpoint in relation to agriculture and were trying to influence others. For instance, descriptions of fertility and plenty from Scottish writers clash with accounts of squalor and poverty from English travellers (50). It is often difficult to believe that the same areas are being referred to by both. Their works may therefore be suspected of potential bias, whether conscious or unconscious, and although they are very valuable sources, they must always be used with this possibility in mind. They form, however, a very small fraction of the relevant sources.

Indirect sources, among which the bulk of the material in estate collections may be included, were those whose purposes were something other than the conveying of information or opinion about agriculture per se. They shed light on the agrarian economy incidentally. Because they

50. For instance, contrast the withering sarcasm of Thomas Kirk in 'A Modern Account of Scotland by an English Gentleman' 1679 (in Brown P.H. *Early Travellers in Scotland* 1891 pp.251-265) with the glowing 'Description of Scotland' by William Lithgow, 1628 (in Brown P.H. *Early Descriptions of Scotland* 1893 pp. 295-302

deal in fact, not opinion, and have no axe to grind, they may be considered for the most part free of the type of deliberate bias which can be detected in the direct sources. However they are not, on this account, entirely free of possible pitfalls.

Care must be taken in the handling of some classes of documents. The papers involved in legal disputes provide the best examples of this by presenting two very different sides to a case (51). In most instances though, it is the evidence presented by witnesses under oath and therefore, presumably, fairly reliable, which is of the greatest significance to the study (52).

However, while indirect sources are not deliberately biased, the information which they provide is frequently ambiguous and the conclusions which may be drawn from them can be challenged. Even so, at the very least, the bias has shifted from the sources to their interpreter. The fundamental problem with estate material is the one-sided nature of the picture of agriculture and agrarian society which they present. The material relates almost exclusively to the preoccupations of the proprietors and the officers who were concerned with the management of their estates. These preoccupations need not have been shared by the tenantry. Estate documents may tell the truth, but not necessarily the whole truth. They were mainly designed with a specific end in view, incorporating as much information as was necessary to achieve that end and little more. Any extra information which was not directly relevant to the purposes of

51. For instance, the dispute between Lord Belhaven and Lord David Hay of Belton over the enclosure of the march between their estates. S.R.O. Hay of Belton muniments GD 73 1/31 (1703-6)

52. This was particularly the case with disputes over commonities and marches. Eg. S.R.O. Biel muniments GD 6 826 (1712-13)

the document may be a valuable bonus but is only incidental. The shortcomings of the sources in this respect must be continually borne in mind. They have been major determinants of the way in which the presentation of the study has been organised.

PART 4 THE ORGANISATION OF THE STUDY

At the outset there appeared to be three principal ways in which the results of the research could be presented. These were by using a regional, chronological or systematic approach. The first, although the most geographical treatment, could not have been achieved effectively due to the irregularity of the coverage of estate documents. The bias of the documentation referred to above would not have allowed the writing of a complete account of agrarian society in the way that is possible for the eighteenth and nineteenth centuries. A chronological approach turned out to be impracticable due to the difficulty of integrating the vast miscellany of data and again, due to differences in coverage, the treatment would have been uneven. In addition, both these approaches would have restricted the effective analysis of agrarian change which was the major theme of the study.

The systematic approach was chosen as being the most suitable, both from the point of view of the topic, and for handling the data. It was decided to present the study as a series of interlinked themes which covered what were considered to be important aspects of agrarian change. Naturally the choice of themes was to some extent conditioned by the slanted nature of the source material. Because of this, some pertinent

questions could not be posed. For instance, the problem of runrig, which has figured so prominently in the studies of the eighteenth century (53), has received less treatment in the present research because the sources do not provide sufficient information concerning it. This does not necessarily mean to say that this question, and many others like it, are considered to be unimportant.

A separate theme has been pursued in each chapter, but it is important to note that none stands alone. Each chapter develops a different aspect of agrarian change in Lowland Scotland in the seventeenth century and should be considered in relation to the other chapters. The basis on which each chapter has been written has been firstly to place the topic in context by describing its importance and considering the work of previous writers. Secondly, as far as possible, a framework has been constructed for the earlier part of the seventeenth century to serve as a yardstick against which the effects of agrarian change can be assessed. Finally, the theme of agrarian change has been developed and efforts have been made to bring out, in the course of the analysis, spatial variations in the pattern of change.

The chapters have been organised into four sections. The first of these explores the background against which agrarian change operated: the estate, which was the unit of organisation and decision-making, and Parliamentary legislation, which provides the most meaningful framework within which agricultural improvement may be studied. Part Two considers the developments which took place in agricultural techniques and

53. For an up-to-date discussion of the significance of runrig see Whittington G. *The Problem of Runrig* S.G.M. 86 (1970) pp.69-73

practices while Part Three examines the corresponding changes which occurred in agrarian society and organisation. Part Four sums up all these developments in a consideration of markets and marketing, which was affected by the trends which have been considered in previous chapters but which also acted in itself as a major influence upon agrarian change.

PART I

THE BACKGROUND TO AGRARIAN CHANGE

CHAPTER I

ESTATE MANAGEMENT

1.1 INTRODUCTION

After the Reformation, the lay estate was the basic unit of land-organisation in Lowland Scotland. The only lands which were not included in estates were those of the burghs, which were probably of small extent, and the holdings of small feu-ferme proprietors. Many small feuars were not very different in the size of their holdings and way of life from the ordinary tenant, save that they had security of tenure. There is very little documentary evidence relating to them, but it is likely that such small proprietors were in many ways integrated into the framework of administration of the estates of their feudal superiors. The number of these "bonnet lairds" is uncertain but their distribution appears to have been highly localised, relating as most of them did to the extent of former monastic lands. These men appear to have made little impact upon the agrarian economy, and the role played by them and by the burghs as landowners, was probably so insignificant on a large scale compared with estates that they have not been considered here.

Estate management is of considerable importance from two points of view. Firstly, its hierarchy was the result of a combination of influences: the structure of rural society, the physical layout of the estate and its natural resources, and the requirements of the proprietor, particularly in relation to the operation of the estate as a profit-making unit. The

structure of estate management was affected and shaped by all three of these factors and it in turn exerted a considerable influence upon each of them. A consideration of the ways in which estates were managed is therefore important in order to understand the structure of rural society in seventeenth-century Lowland Scotland. It forms the link between that society and the geographical and economic framework, embodied in the estate, within which it existed. Secondly the estate, personified by the proprietor, was the unit of decision-making in the agrarian economy and the hierarchy of management was the means by which such decisions were implemented. This aspect is of particular importance in relation to the introduction of innovations and improvements into Scottish agriculture.

The proprietor had a greater or lesser part to play in the running of his estate, depending upon its size and his own status and ambitions. Small proprietors would in many cases have been obliged, for want of sufficient means to do otherwise, to live on their lands and to take upon themselves a considerable share of their day-to-day management. By doing this they could oversee in person every item of expenditure, and save the cost of estate officers' fees. This would not apply if the proprietor had an occupation or profession outside the estate from which a good part of his income derived, and to which he had to devote a good deal of attention. For instance Sir John Nisbet of Dirleton, as Lord Advocate, spent most of his time in Edinburgh, leaving the management of his estates to paid officials (1), and John, first Earl of Panmure, a gentleman of the bedchamber and confidant to James I and Charles I, spent most of his time in London, making only occasional visits to his lands in

1. S.R.O. Biel muniments GD 6 1520 (1681-86)

Scotland (2). In addition, the traditional pattern of the landed aristocracy was beginning to change as middle-class burgesses who had made their fortune in manufacturing or trade bought land as a means of investing their capital (3).

No matter how much time a proprietor had available for the management of his estates, most could never hope to attend to every detail in person unless their lands were of small extent and compact. Throughout Lowland Scotland, estates were administered by a hierarchy of officials with specific duties and responsibilities (Fig 1.1).

1.2 THE FACTOR

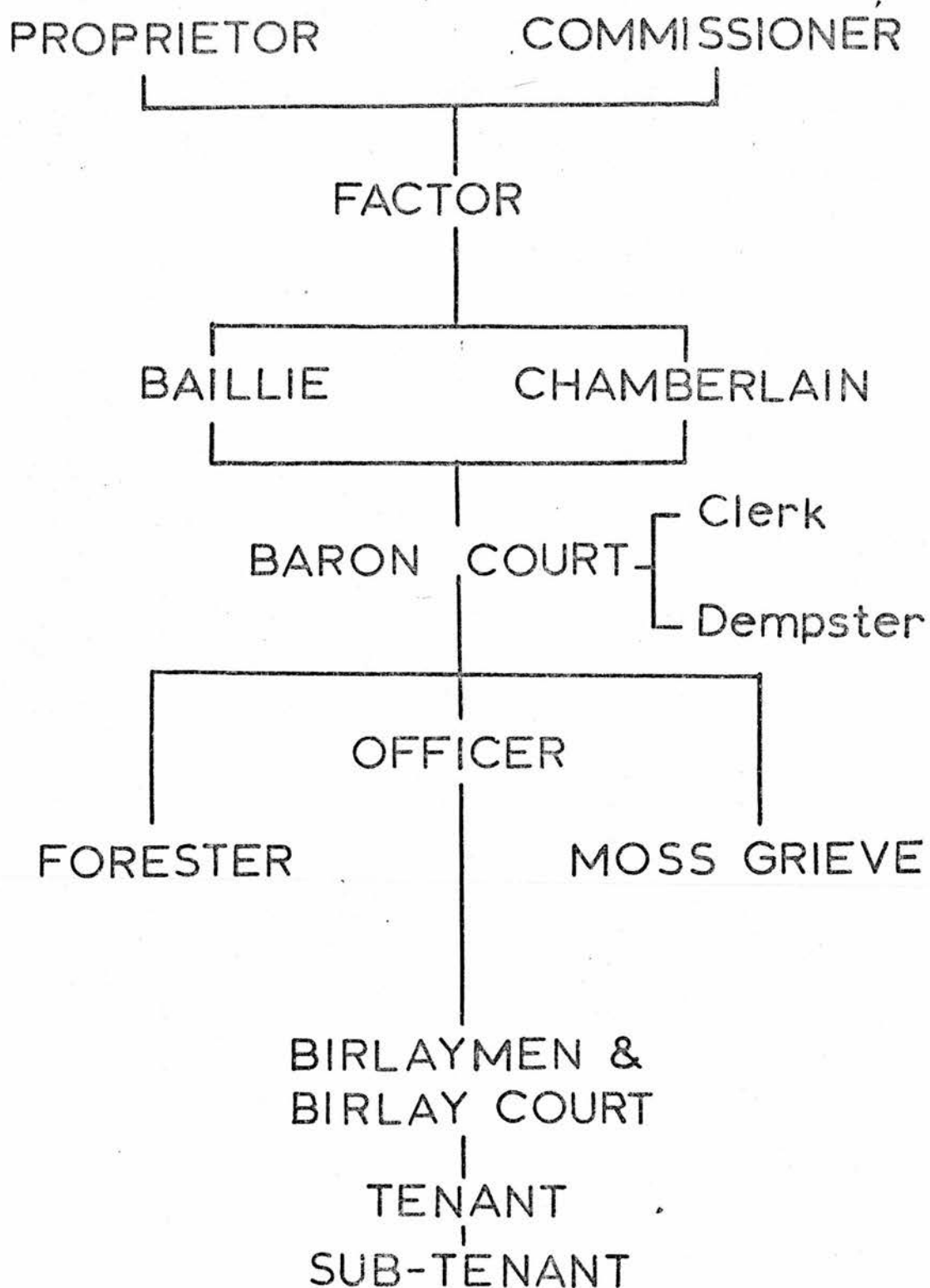
The most important man in the estate hierarchy was the factor. He was authorised by a written legal commission from the proprietor or, if the proprietor was a minor, by a commissioner acting in his name, to act in place of the proprietor in all affairs and transactions relating to the running of the estate. This might occur when a proprietor was obliged to go abroad, or was likely to be away from his estate for any length of time. Alternatively, when an estate was scattered in many fragments, a factor would be necessary to administer each portion.

The principal duties of a factor were the collection of the rents on the estates in his charge, and the disposal of produce for money. He was also required to make payments for expenses involved in the running of

2. D.N.B. John Maule, First Earl of Panmure.

3. One such family were the Rosses of Arnage, merchant burgesses of Aberdeen, who acquired the small estate of Arnage near Ellon as an adjunct to their textile-exporting business in Aberdeen (S.R.O. Ross of Arnage muniments GD 186)

FIG. 1.1 THE HIERARCHY OF
ESTATE MANAGEMENT.



the estate, but more important, he was often responsible for making decisions as to what expenditure was to be incurred.

Factors were also responsible for convening the baron court on behalf of the proprietor, for entering new tenants into their holdings and heirs into feu-holdings possessed by vassals of whom his employer was the feudal superior. In addition, he took legal action to remove tenants who proved to be unsuitable, and prosecuted tenants for arrears of rent (4).

The position of a factor and his responsibilities varied according to the size of the estate. On a large estate, the factor would be responsible for considerable sums of money, and the results of decisions made by him might have far-reaching consequences. For instance, Patrick Langshaw, the overall factor for the Buccleuch estates during the 1650s, had over £100,252 Scots passing through his hands in a year (5). Opportunities for fraud were numerous but instances of dishonest factors are rare (6). In the long run, incompetence was probably a more serious problem (7). Most factors appear to have acted strictly in the interests

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4. The duties of factors are usually set out in their commissions. The following references are a sample of the most detailed among the large number that have survived.

S.R.O. Airlie muniments GD 16 27 53 (1643)

S.R.O. Biel muniments GD 6 1470 (1631-40)

S.R.O. Leven muniments GD 26 5 299 (1629), 5 303 (1670), 310 (1690)

S.R.O. Bargany muniments GD 109 2938 (1599), 2942 (1607)

5. S.R.O. Buccleuch muniments GD 224 943 4 (1654)

6. The most notable which has come to light was the case of Gilbert Murray, factor for the Thornton estates in East Lothian, who embezzled considerable sums of money and produce to repay debts accumulated by him in a series of unsuccessful business ventures (S.R.O. Biel muniments GD 6 1522/1523, 1683)

7. Lord Bargany was unfortunate in employing two such men as factors on his estates at about the same time. One man merely failed to collect his employer's rents (S.R.O. Bargany muniments GD 109 ..

of their employers however, and some were not above openly disputing their master's instructions if they considered them detrimental to the well-being of the estate (8).

A good factor would obviously have needed to have had considerable personal experience of agriculture to undertake his work effectively. Equally, he would have required at least a rudimentary knowledge of accountancy. As much of the work of a factor was concerned with legal business, some knowledge of the laws relating to property would have been essential. He would have had to have been adept at handling people in order to ensure that tenants paid their rents as fully as possible, or to drive a hard bargain with the merchants who bought the produce of the proprietor. Equally, he would have needed to have been a shrewd judge of character in order to select the most suitable tenants for the estate. In the performance of his duties he would have spent a considerable amount of time on horseback, travelling to regional market centres in order to negotiate the sale of his employer's produce, or in travelling to Edinburgh to transact legal business.

The kind of men who were employed as factors varied. Often, on smaller estates, they were tenants, sometimes of quite substantial farms, as in the case of the factor of the Culloden estate in Inverness-shire, who had the tenancy of a farm of one and a half ploughgates (9). On fragmented estates, the factor was often given the tenancy of the

3320 (1687), 3321 (1687) whilst the actions of the other involved him with the Privy Council (Ibid. 3325 (1687))

8. A later factor of the Bargany estates took his employer to task for trying to let his holdings at such high rents that suitable tenants were scared away (Ibid. 3420 (1699))

9. S.R.O. Seafield muniments GD 248 39 (1623)

mains, usually a large farm on the best soil, sometimes partly enclosed, with its attendant services. In some instances, the factor was also granted the estate house to live in (10). By contrast, some factors had more modest holdings, such as the factor of the barony of Lethen, south-east of Nairn, who occupied a holding of only half a ploughgate (11).

Some of the factors of larger estates were men of considerable substance. Francis Scott of Mangerton was a proprietor in his own right, owning a small, compact estate in the neighbourhood of Newcastleton in Liddesdale, but he also held the position of factor to the Duke of Buccleuch for the latter's estates in Liddesdale which surrounded Mangerton's own lands. Doubtless the unusually high salary of £666.13.4 Scots per year was the principal incentive. Several other factors bear the designation "of", suggesting that they may have been small lairds who, possibly on account of financial difficulties, had agreed to work as factors for larger estates (12).

In some instances, when a proprietor was going abroad for a short period of time, he might appoint a close relative to act as his factor during his absence. For example, in 1683 the Earl of Leven appointed his uncle, James Melville of Cassingray, as his factor (13), and in 1690 he granted a similar commission to his uncle and to Alexander, Lord Raith, his brother (14).

Although the position of factor was probably one of considerable prestige among rural society, there is no evidence that estate management

10. S.R.O. MacPherson of Cluny muniments GD 89 770, 771 (1702)

11. S.R.O. Seafeld muniments GD 248 39 (1622)

12. S.R.O. Scott of Mangerton muniments GD 237 88 5 (1668)

13. S.R.O. Leven muniments GD 26 306 (1683)

14. Ibid. 310 (1690)

had, as yet, developed into a recognised profession, as happened during the following century (15). Presumably each factor was appointed on the strength of his individual merits and experience, although a recommendation by a respected proprietor might well carry a good deal of influence (16). There was some tendency for son to follow father into the business (17), and there are indications that poorer relatives, possibly younger sons or members of cadet branches of a family, were sometimes appointed as factors (18).

Some factors were men of considerable wealth, and their important position in rural society probably provided them with many opportunities for branching out as entrepreneurs in their own right. Factors often accumulated sufficient capital to lend substantial sums to their employers on wadset. For instance, the factor of the Earl of Findlater is recorded in 1656 as having lent the Earl 17,840 merks which brought in an annual interest of £1,427.4.0 Scots (19). Some factors on east-coast estates which were involved in the grain trade, set up as merchants on their own account, buying grain from the proprietor and either selling it locally or arranging to have it shipped further afield (20).

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15. Mingay G.E. *The Eighteenth Century Land Steward in Land, Labour and Population in the Industrial Revolution*, Essays Presented to J.D. Chambers ed. Jones E.L. and Mingay G.E. (1967) pp.3-7
 16. For instance, David Scrimseour, overall factor for the Buccleuch estates at the end of the seventeenth century, was appointed principally on the recommendation of the Earl of Melville, one of the commissioners for the estate at that time (S.R.O. Leven muniments GD 26 506 (1704-07))
 17. Eg. S.R.O. Dalhousie muniments GD 45 18 17 (1674)
 18. Eg. Ibid. 43 (1663), S.R.O. Bargany muniments GD 109 3320 (1687), S.R.O. Buccleuch muniments GD 224
 19. S.R.O. Seafield muniments GD 248 580 6 (1656)
 20. Eg. S.R.O. Hay of Yester muniments GD 28 2259 (1698), S.R.O. Dalhousie muniments GD 45 18 8 (1668), S.R.O. Biel muniments GD 6 1552 (1682)

Lord Bargany's factor in Ballantrae at the end of the seventeenth century was another man of property who branched out into fields other than that of estate management. Apart from holding leases of various tenements in Ballantrae itself (21), had had a lease of the local salmon fishings (22), and in conjunction with a merchant in Girvan, he purchased timber from Lord Bargany's lands in the parish of Dailly (23). In 1705 he obtained a 57 year tack of some lands in Ballantrae in return for taking a leading part in the improvement of the village and sinking £1,000 of his own capital into the venture (24).

The examples cited above suggest that by the end of the seventeenth century, a new group of men was beginning to appear: men who viewed agriculture and estate management in broad terms and who saw opportunities for making money in a number of associated enterprises. The grain and timber trades, property development and money-lending have been mentioned above but there were doubtless other outlets. These men may have been the most versatile and prominent of the class of prosperous tenant farmers who, as will be suggested in Chapter 7, became increasingly important during the century. Their involvement in a wide range of activities must have made them aware of the benefits of agricultural improvement and sensitive to changes in the economy as a whole. It was this class of men, small-scale businessmen who had a connection with the land or substantial tenant farmers seeking to branch out into other fields, and using estate management as a stepping stone, who were to

21. S.R.O. Bargany muniments GD 109 3494 (1705)

22. Ibid. 3507 (1707)

23. Ibid. 3499 (1705)

24. Ibid. 3497 (1705)

play such an important part in the sweeping changes which took place in agriculture in the later eighteenth century (25). It is highly significant that such men began to appear towards the end of the seventeenth century, and it is an indication that agrarian and economic change was accelerating, albeit slowly, at this time.

1.3 THE BAILLIE AND THE BARON COURT

At the next level in the hierarchy of estate administration, came the baillie. His task was a specific and fairly limited one, namely to convene and preside over the baron court in the absence of the proprietor, as his representative and judge.

The baillie did not often have many duties to perform outwith the baron court, but he might act as a superintendent or arbiter of estate business conducted by the birlaymen. For instance, it is recorded in the court book of the barony of Leys in Aberdeenshire in 1636, that the baillie acted as an overseer when the birlaymen laid out the shares of a joint-tenant farm (26), and the baillie of the Archbishop of Glasgow was required to supervise the division of the outfield runrig lands of Ancrum in Roxburghshire in 1607, at the request of the tenants (27). The baillie generally appears to have been a fairly substantial tenant (28).

25. Smout T.C. *A History of the Scottish People 1560-1830* (1969) pp.287-289

26. *Extracts from the Court Book of the Barony of Leys 1621-1674* Spalding Club Miscellany v (1852) p.226 (1636)

27. S.R.O. Biel muniments GD 6 1020 (1607)

28. For example, the baillie of the barony of Kingoldrum on the Airlie estates in Angus held a ploughgate of land and was sufficiently prosperous to lend his employer 2,600 merks on wadset (S.R.O. Airlie muniments GD 16 30 11 (1692))

To help him administer the baron court, the baillie had two men under him. The clerk of the court was generally a local notary public who kept the written records of the court and could advise on legal procedure. The clerk was aided by the dempster, a functionary whose position had survived from medieval times, but whose appointment appears to have been only nominal by the seventeenth century (29).

Traditionally, the baillie only presided over the court and ensured that its business was conducted in accordance with the law (30), and cases were judged by a jury elected from among the tenants. McIntyre states that during the later sixteenth century, the jury tended to become displaced by the authority of the baillie as judge (31), and it appears that by the seventeenth century, many courts did not incorporate a jury at all. However, juries did continue to function in some of the courts whose records have survived, such as the baron court of Stichill where, as late as 1655, fifteen "honest men" were elected to act as the jury of the court (32).

1.4 THE ROLE OF THE BARON COURT

Until the abolition of heritable jurisdictions in 1747, the proprietor of every estate was entitled to hold his own baron court. Subsequently, courts were not entirely abolished but their powers were so drastically

29. Traditionally, his duty was to pronounce the sentence decided by the baillie. Many courts managed without one.

30. McIntyre P. *The Franchise Courts in An Introduction to Scottish Legal History* Stair Society (1958) p.375

31. McIntyre P. (1958) *op.cit.* p.376

32. *Records of the Baron Court of Stichill 1655-1707* ed. Gunn C.B. S.H.S. (1905) p.1 (1655)

curtailed that they no longer provided any significant source of income or prestige to the proprietor, and they fell into disuse (33).

The powers of the seventeenth century baron court in Lowland Scotland were more restricted than they had been formerly. At an earlier date, the baron court had possessed almost absolute powers in both civil and criminal cases. The Crown only reserved cases of treason exclusively for higher courts, and proprietors had the right of pit and gallows, i.e. the power to imprison and execute criminals (34). With the spread of central authority, and particularly the growing importance of the sheriff and regality courts, as the power of the feudal barons declined, the jurisdiction of the baron court became more restricted (35). The proprietor no longer had the power to try, sentence and carry out punishment on individuals who had committed serious crimes of violence and theft (36), although some proprietors still maintained the right to imprison individuals (37). The court's remit extended only to the trial of cases of assault which were not of a severe nature, and other offences such as petty theft or debt, and to dealing with the various breaches of good co-operative agricultural practice which came under the general heading of breaches of "good neighbourhood".

Three or four courts were sometimes held in a year (38), although if there was not sufficient business to warrant this, they might be held at less regular intervals. Tenants and vassals were generally bound to

33. The Court Book of the Barony of Urie 1604-1747 ed. Barron D.G. S.H.S. (1892) p.vii

34. Ibid. p.vi

35. McIntyre P. (1958) op. cit. p.377

36. Court Book of Urie op.cit. p.vi

37. The Forbes Baron Court Book Misc.S.H.S. III (1919) p.224

38. S.R.O. Leven muniments GD 26 2 1

attend the baron court as suitors, in the same way that the proprietor himself was bound to attend the sheriff court (39); frequently this was stated in the tenants' leases and it was a standard clause in feu-charters (40). Tenants and feuars were warned when to attend by the barony officer (41).

The baron court originated as a feudal institution and, as feudal society was organised upon broadly similar lines at each level of the feudal hierarchy, its structure was modelled upon the highest court of the kingdom, and the officers who served it were counterparts of those closest to the monarch (42). However, such feudal survivals are misleading, as they may give the impression that the function of the court itself was equally outdated. No matter how far back into the feudal past the legal antecedents of some of the features of the seventeenth-century baron court can be traced, this should not obscure the fact that it was very much geared to the needs and demands of the society which it served, as will be shown below.

The first basic role of the court was to serve as an instrument for protecting the interests of the proprietor. It provided a legally accepted means of enforcing his rights and claiming his dues without the expense and trouble involved in going through a higher court. Much of the business of a baron court might be concerned with the prosecution of tenants whose rents were in arrears, and with the enforcing of the related penalty clauses which were contained in the tenants' tacks (43). The court also

39. McIntyre P. (1958) *op.cit.* p.375

40. S.R.O. Bargany muniments GD 109 2971 (1629)

41. Court Book of the Barony of Calder NL. MS. 3725 48 (1586)

42. Court Book of Urie *op.cit.* p.vii

enabled the proprietor to prosecute his tenants for damage committed by them to his property. The most common offence of this nature was the cutting of live timber or the peeling of bark in the proprietor's private woods, a reflection of the shortage of native timber (44).

Other common offences against the landowner's property which were dealt with were dyke-breaking (45), and the trespassing in, and damaging of, enclosed pasture (46). A good deal of time was spent in some courts ensuring that the tenants performed their various labour services adequately and did not break their thirlage (47).

There was, however, a more positive side to this aspect of the proprietor's use of the baron court. It was principally by means of it that an enterprising proprietor could compel his tenants to undertake and safeguard agricultural improvements of benefit to landlord and tenant alike. The court could be used to back up the clauses that might have been inserted in tenants' tacks or it could pass acts independently. Many courts directed their efforts towards the planting of young trees and their protection by enclosures (48).

43. Extracts from the Court Book of the Barony of Skene 1613-1633
Spalding Club Misc. (1852) v p.210 (1627)

44. Eg. Court Book of Forbes op.cit. p.226 (1669)
Court Book of Leys op.cit. p.222 (1623)
Court Book of Urie op.cit. p.7 (1604), p.18 (1616)

45. Eg. Court Book of Urie op.cit. p.92 (1672)
Court Book of Stichill op.cit. p.50 (1667)
Court Book of Corshill S.R.O. GD 1/300 (1666)

46. Eg. Court Book of Forbes op.cit. pp. 225, 245, 254
S.R.O. Leven muniments GD 26 2 1 (1591)
S.R.O. Clerk of Penicuik muniments GD 18 695 (1681)

47. Court Book of Stichill op.cit. p.50 (1667)

48. In 1667 the baron court of Stichill passed an act requiring each tenant and cotter to plant six trees a year in their yards and to keep their dykes built up to protect them (Court Book of Stichill op.cit. 50 (1667)) Other courts which passed similar acts were: Court Book of Urie op.cit 96 (1682), Court Book of Monymail, S.R.O. Leven muniments GD 26 2 1 (1636)

Baron courts frequently enforced the sowing of legumes as a means of maintaining soil fertility, apparently in support of the Acts of Parliament passed to this effect (49). At Forbes an act was passed in 1671 whereby each unit of land worth a chalder of grain rent or 100 merks of money rent was to sow two pecks of peas (a token quantity) (50). At Stichill the sowing of peas was taken more seriously (51), but the baron court of Monymail in Fife went furthest of all as far as the legislation for improved crop rotations was concerned. In 1636 it passed a series of acts which compelled tenants to keep a third of their infields either in fallow or sown with peas in any year and which prevented them from taking two successive crops of oats on their infields (52).

Moralistic proprietors could also use the baron courts as instruments for the imposition of their own standards of behaviour upon their tenants. For instance, when Sir John Clerk of Penicuik took over the ownership of the barony of Lasswade in Midlothian from Sir John Nicholson, he introduced a long series of new acts, many of which were concerned with Sabbath-breaking and the prevention of swearing, drunkenness and rowdy behaviour (53).

The court also served as an impartial source of justice in disputes between the tenants themselves. These cases frequently took the form of prosecution for petty debts but, more significant from the point of view of agriculture, were the disputes concerning breaches of "good neighbourhood". Under this heading were included all the co-operative

49. A.P.S. (1426) II p.131, (1449) II p.35, (1685) viii p.494

50. Court Book of Forbes op.cit. p.283 (1671)

51. Court Book of Stichill op.cit. p.154 (1705)

52. S.R.O. Leven muniments GD 26 2 1 (1636)

53. S.R.O. Clerk of Penicuik muniments GD 18 695 (1696)



agricultural practices which were necessary to protect the individual in a community where, particularly due to the division of arable lands in run-rig and the prevalence of common pasture, the rights of one's neighbours always had to be taken into consideration. The concept of "good neighbourhood" is summed up in the maxim "do unto others as you would have them do unto you".

The most common infringement of good neighbourhood was the damaging of crops and grass by animals trespassing due to inadequate herding and the absence of enclosures (54). Claims for damages of this sort took up a considerable amount of time in some courts, particularly in lowland areas where a high proportion of the land was in arable. The problem appears to have been far less important in upland areas where the arable land was more limited in extent, and could be more easily protected by effective head-dykes.

Other breaches involved the failure of the tenants to maintain their joint yard- and head-dykes sufficiently well to prevent the trespass of animals (55). Acts were sometimes passed compelling tenants to adhere to a common crop rotation (56) but this was generally enforced in the tenants' tacks rather than through the baron court.

The baron court was undoubtedly a useful source of revenue for the proprietor, for although he might sometimes imprison an offender (57) or

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54. Eg. S.R.O. Airlie muniments GD 16 36 18
 Melrose Regality Records ed. Romanes C.S. S.H.S. (1914) i,
 p.7 (1606)
 Court Book of the Burgh of Kirkintilloch ed. Pryde G.S. S.H.S.
 (1963) p.105 (1680)
55. Court Book of Stichill op.cit. p.95
56. Ibid. p.110
57. Court Book of Urie op.cit. p.164

at least put him in the stocks (58), punishment almost invariably took the form of a fine. For breaches of good neighbourhood, these might not be very great (59). However, large numbers of tenants could sometimes be brought before the court for such offences (60). The revenues of the baron court would generally go into the pocket of the proprietor, but in some cases a part of the money was used for poor relief or to pay the estate officers on a commission basis (61).

The baron court has been viewed in a number of ways by later writers. Handley saw it as an instrument of oppression, where unscrupulous proprietors could extort extra services from their tenants by means of biased interpretations of the vague "use and wont" clauses in their leases (62). Doubtless such proprietors did exist, but the injustice of this view is amply demonstrated by the paucity of references in surviving court records to tenants' services. Such references as do occur are mainly concerned with the unpunctuality of the tenants in performing their services and not with attempts to impose additional burdens (63).

Smout has considered that the basic function of the court was to provide a place where the tenants could come together and interpret

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- 58. The Copie of a Baron's Court Newly Translated by Whats-You-Call-Him, Clerk to the Same. Attrib. to Patrick Anderson, physician to Charles I. Scene 12
 - 59. For instance, the fines imposed by the baron court of Stichill for trespassing animals were 2s Scots for every horse and cow, and 4d for every sheep (Court Book of Stichill op.cit. 16)
 - 60. 98 tenants and subtenants were fined for cutting wood in Glenisla in one of the Earl of Airlie's courts (S.R.O. Airlie muniments GD 16 27 155)
 - 61. S.R.O. Clerk of Penicuik muniments GD 18 695 (1696)
 - 62. Handley J.E. Scottish Farming in the Eighteenth Century (1953) p.89
 - 63. Court Book of Forbes op.cit. p.225 (1660)
Court Book of Leys op.cit. p.222 (1621)
S.R.O. Leven muniments GD 26 2 2

custom (64). This must certainly have been the case where disputes involving good neighbourhood were concerned, but this does not necessarily imply, as Smout does, that the structure and function of the baron court was a factor which encouraged stagnation in agriculture and acted as a barrier to innovation. It has been shown that some seventeenth-century baron courts were instrumental, under certain proprietors, in introducing agricultural improvements such as the planting of trees in the tenants' yards and the sowing of legumes. More commonly perhaps, the courts were responsible for the protection of improvements introduced by the proprietor around the estate policies and the mains, such as enclosures for pasture, hay and crops. Hamilton is perhaps more fair in his assessment of the role of the baron court in the eighteenth century, for he considers that one of its most important functions was "the general improvement on agriculture" (65).

It is probably wrong to try and assign a stagnant or forward-looking role to the baron court as an institution. It is likely that the business transacted by any individual court, the emphasis it placed upon certain types of offences, and the extent to which it legislated for agricultural improvements, reflected in great measure the personality of the individual proprietor. Proprietors with advanced ideas such as the Barclays of Urie and Sir John Clerk of Penicuik, might use the court as a means of compelling their less enlightened tenantry to undertake improvements which they would otherwise have been unwilling to carry out. More indirectly, the court could have added force to improving clauses inserted

64. Smout T.C. (1969) *op.cit.* p.115

65. Hamilton H. *An Economic History of Scotland in the Eighteenth Century* (1963) p.49

in the tenants' tacks. On the other hand, proprietors who were content with the status quo might impart a backward, or at least unprogressive, air to the business of their baron courts.

When the baron court is considered in general terms its importance becomes clearer. Its organisation and practices lay at the very heart of the estate's administrative structure, and most of the officers would have needed to have operated through it when carrying out their duties. The factor and chamberlain would have used the court for compelling the payment of rents, and the barony officer and birlaymen are best viewed as the executive arm of the court, serving the proprietor through the court rather than directly through any of the higher-rank officers. The court thus bound the estate together, from the sub-tenant to the proprietor, providing them with an institution which was, hopefully, impartial and before which each individual, including the proprietor himself, was equal at law (66). It was convenient to have a source of justice close at hand and which met fairly frequently, when the organisation of justice at a regional level was not always entirely effective (67), and communication was slow and difficult. This must have contributed greatly towards the maintenance of a stable and peaceful rural community, for before the baron court the most humble sub-tenant could, in theory, seek justice at no cost to himself in either money or time.

66. McIntyre P. (1958) *op.cit.* p.375

67. Smout T.C. (1969) *op.cit.* p.103

1.5 THE CHAMBERLAIN

The role of the chamberlain was theoretically restricted to the collection of rents, the giving of receipts to the tenants, the keeping of accounts and rentals, and the prosecution of tenants for arrears of rent. His status was similar to that of the baillie in that they both operated under the direction of the factor. The baillie and chamberlain had to work in close co-operation as the prosecution of tenants for arrears of rent had to be carried out through the baron court. Indeed, so close was the working relationship between these two positions that they were frequently performed by the same man (68).

In practice, the duties of the chamberlain overlapped with those of the factor and the two offices often became blurred so that factors were often styled "factor and chamberlain" (69). Elsewhere, men who are described as chamberlains are seen to have performed some of the duties of a factor. The chamberlains of some east-coast estates not only collected the grain rents from the tenants but handled the estate's end of the grain trade, riding to regional market centres to find buyers, and overseeing the loading of the ships when they were sent to the harbours where the grain had been collected (70). These tasks were more usually undertaken by factors.

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- 68. Melrose Regality Records *op.cit.* II p.16 (1622)
S.R.O. Biel muniments GD 6 1022 (1639), 1023 (1622)
 - 69. Court Book of Stichill *op.cit.* p.3 (1655)
S.R.O. Biel muniments GD 6 1521 (1683)
 - 70. S.R.O. Seafield muniments GD 248 39 (1687)
S.R.O. Airlie muniments GD 16 30 67 (1627)

The chamberlain, like the baillie and the factor, was generally a fairly well-to-do tenant (71). Chamberlains on smaller estates could, however, be men of more limited means. The chamberlain of the barony of Auchannachie, near Banff, for example, held a mere two oxgates of land (72). As in the case of factors, the office of chamberlain sometimes passed from father to son (73).

Chamberlains were often sufficiently well-off to lend money to their employers. The chamberlain of the Boyne estate in Banffshire is recorded as having lent his employer 500 merks (74). That this may not have been an uncommon practice is suggested by Patrick Anderson, in a satirical play attributed to him. The play takes a cynical look at the operation of a baron court. In one of the scenes the baillie takes the chamberlain, who has inadvertently offended the laird, on one side and advises him ...

"Lend him but twenty pieces, I'll be plain

Ye shall be friends yet or the morn again .." (75)

1.6 THE OFFICER

Most of the actual face-to-face confrontation between the estate administration and the tenants was done by the man who was usually known as the officer, sometimes barony-, ground- or land-officer and occasionally sergeant. This man acted as the executive of the factor, baillie and

71. S.R.O. Buccleuch muniments GD 224 942 3 (1650)

72. S.R.O. Seafeld muniments GD 248 639

73. S.R.O. Airlie muniments GD 16 20 67 (1627)

74. Ibid. 30 70

75. The Copie of a Baron's Court op.cit. Scene 5

chamberlain, doing most of the travelling from farm to farm and receiving much of the abuse from refractory tenants. Indeed, it was not uncommon for baron courts to pass acts specifically against the deforcement of the officer by the tenantry (76). "Deforcement" involved the forcible prevention of the officer from carrying out his duties, and it sometimes included actual assault on the part of the tenant (77).

The officer's duties were diverse in nature but they do not seem to have varied significantly between estates. An important part of his work involved giving warning in person to tenants as to when and where they were required to perform their labour services (78), and sometimes supervising them when they carried out the work (79). Officers were responsible for ensuring that the acts passed by the baron court were enforced, and that the court was informed of wrongdoers so that they could be punished (80).

In some baronies, the officers collected rents from the tenants for the chamberlain (81), and they undertook the physical removal of tenants who had fallen in arrears (82), as well as drawing up inventories of the property of such tenants. In his role as the executive arm of the baron court, the officer was required to deliver impartial, sworn statements concerning the disputes between tenants (83), and to play an active part

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- 76. Eg. S.R.O. Dalrymple muniments GD 110 717
S.R.O. Clerk of Penicuik muniments GD 18 675 (1625)
 - 77. Melrose Regality Records op.cit. II p.42 (1662)
 - 78. Eg. Court Book of Urie op.cit. p.18 (1616)
 - 79. Eg. S.R.O. Abercairney muniments GD 24 602 (1696)
 - 80. Eg. Court Book of Stichill op.cit. p.50 (1667)
Melrose Regality Records op.cit. I p.56 (1607)
 - 81. S.R.O. Clerk of Penicuik muniments GD 18 675 (1694)
 - 82. S.R.O. Dalhousie muniments GD 45 18 2 (1614)
 - 83. Melrose Regality Records op.cit. II p.435 (1675)

in such disputes by such means as the setting of march stones (84).

Usually, one officer was appointed for each barony, although in the Regality of Melrose each cluster of small feuars in large ferm-touns like Darnick or Newstead, had their own officer (85). The officer generally appears to have been one of the tenants, but the appointment was made with care in some cases at least. A petition to the Duchess of Buccleuch has survived in which Francis Scott, son of the officer of the barony of Branxholme, near Hawick, requested that he be appointed to his father's office. He took care to stress that he had several years schooling, and therefore presumably was literate; he had served "wryters" in Edinburgh, probably as a clerk (86). Another letter among the Annandale muniments mentions that the officer to be appointed was required to be "skilled in husbandry" (87). In addition to being an experienced and educated man, the person who was to be chosen had, in some cases, to be approved by the tenants themselves before the appointment could be confirmed (88).

1.7 THE BIRLAYMEN

The officer could not be everywhere at once however, or attend to every detail in person, and on most estates the volume of work was more than any one man could handle. The burden was eased by the appointment,

84. Melrose Regality Records II p.435 (1675)

85. Ibid. III pp.47-49

86. S.R.O. Leven muniments GD 26 5 499 (1702)

87. Fraser, Sir William The Annandale Family Book of the Johnstons, Earls and Marquises of Annandale (1894) II p.307 (1655)

88. Court Book of Corshill op.cit. (1677)

from among the ranks of the tenants, of a number of part-time voluntary helpers who were known as birlaymen.

Birlaymen were also referred to as "honest" or "sworn" men, and this is indicative of their status. They were merely tenants in whom the proprietor or his estate officers placed a particular trust, and who could be relied upon to give a fair and impartial verdict under oath, in disputes and other business between tenants or between a tenant and the proprietor. The position appears to have carried little benefit apart from status. Compared with the considerable body of evidence relating to the salaries and payments made to other estate officers, there are only two references to payments being made to birlaymen (89). Sufficient estate accounts have survived to make it fairly certain that, in general, birlaymen were either unpaid or received only a token payment for their services, and that they performed them merely for reasons of prestige or from a genuine desire to help the community in which they lived.

The duties of the birlaymen were almost entirely connected with the maintenance of "good neighbourhood", and in providing impartial assessments in valuations and disputes. With regard to breaches of good neighbourhood they worked directly under the officer or baillie, either within the jurisdiction of the baron court or, on some estates, with a separate court of their own known as the birlay court.

The birlaymen ensured that the acts of either court relating to agricultural affairs were implemented, and that any of the tenants who disobeyed them were reported (90). They supervised many of the proceedings

89. S.R.O. Forbes muniments GD 52 312 (1663)

S.R.O. Seafield muniments GD 248 402

90. Eg. Court Book of Forbes op.cit. p.285 (1671), 228 (1661)

on an estate where a good deal of co-operation among the tenants was required but where self-interest on the part of individuals could be relied upon to outweigh impartiality, if given the chance. Birlaymen are recorded as laying out boundary-stones (91), dividing the lands of multiple-tenant farms lying in runrig into "just and equal" shares (92), deciding on the stents to be imposed upon the commonty (93), and providing the laird with lists of approved repairs to the tenants' houses (94).

In their role as valuers, they were most commonly employed to assess the condition of tenants' houses at the beginning and ending of a lease. As most leases stipulated that the tenant should maintain the buildings in the state in which he received them, it was important that a record be made of their value at the tenant's entry so that when he left, he could be compensated for any improvements he had made, or be penalised for any deficiencies (95). In connection with offences against good neighbourhood, they were frequently required to assess the value of crops and grass destroyed by stray animals, so that compensation could be paid to the victim (96). They were also called in to make inventories of the possessions of tenants who were so badly in arrears that the seizure of their movable goods was the proprietor's only resort (97). In work of this nature, birlaymen were usually appointed in equal numbers to act for

91. Court Book of Kirkintilloch op.cit. p.132 (1685)

92. Court Book of Leys op.cit. p.226 (1636)

S.R.O. Dalhousie muniments GD 45 20 9 (1666)

93. S.R.O. Abercairney muniments GD 24 602 (1706)

94. Ibid. 602 (1696)

95. S.R.O. Airlie muniments GD 16 27 67, 16 28 59

S.R.O. Dalhousie muniments GD 45 18 5 (1662)

96. Court Book of Stichill op.cit. p.46 (1667)

Court Book of Kirkintilloch op.cit. p.181 (1669)

97. S.R.O. Hay of Yester muniments GD 28 2259 (1698)

each party involved in the dispute. Presumably each group gave the most favourable valuation for the party to which they were assigned and some compromise between the two figures was reached (98). Probably as a result of this, birlaymen were often appointed in quite large numbers; for instance, twelve were appointed for the barony of Penicuik (99), and there were at least ten for the small barony of Stichill (100).

The birlay court, where it existed, operated at a lower level than the baron court. It had no strictly criminal jurisdiction and dealt only with breaches of good neighbourhood. On estates where a birlay court did not exist, business of this type was transacted by the baron court. The advantage of the birlay court was its informality; it did not have to be regulated strictly according to legal principles as it had no civil or criminal jurisdiction. Presumably any tenant who refused to recognise its authority, or who questioned any of its judgements, could have had his case taken before the baron court. Because of the informal nature of the court, written records were not kept as carefully as for the baron court, and in many cases they may not have been kept at all. Fortunately, lists of the acts of the birlay courts of Auchencraw, near Coldingham, and Penicuik, have survived, together with some details of the conduct of the latter court. At Penicuik in 1676, the birlay court was appointed to be held every Saturday night, "in respect that there is ill neighbourhood among the tenants" (101). Thus, minor offences could have been dealt with immediately while the damage was still fresh and the memories

98. S.R.O. Airlie muniments GD 16 27 49 (1637)

99. S.R.O. Clerk of Penicuik muniments GD 18 695 (1664)

100. Court Book of Stichill op.cit. p.125 (1697)

101. S.R.O. Clerk of Penicuik muniments GD 18 695 (1664)

of witnesses unclouded, rather than waiting for the case to be brought before the baron court, which might not have sat for three or four months or possibly longer.

The birlaymen, like the barony officer, were required to take an oath of fidelity upon appointment. In the court book of Forbes, birlaymen were required to be "Loyal and true birlaymen throughout the lands of Tannadis, both to master and tenant" (102), emphasising that while they were appointed by the proprietor, they were supposed to be impartial. Appointments were usually made for a year (103) but in some baronies, many of the birlaymen were re-appointed for several successive years (104). At Forbes, eight of the twelve birlaymen appointed in 1660 were still in office in 1663 (105). In the barony of Corshill in Ayrshire, they were only appointed with the consent of the tenants, emphasising that they were not intended to be mere tools of the proprietor (106).

1.8 SPECIALIST OFFICERS

In addition to this hierarchy of estate officers which appears to have been standard on both large and small estates throughout Lowland Scotland, men were sometimes appointed to perform more limited and specialised functions connected with the running of the estate.

One of these positions was that of the forester. Foresters were not only appointed on those estates which bordered on the Highlands and had

102. Court Book of Forbes op.cit. p.237 (1673)

103. Ibid. 254 (1664)

104. Court Book of Forbes op.cit.

105. Ibid.

106. Court Book of Corshill op.cit.

considerable reserves of natural timber, but also on smaller Lowland estates such as Stichill and Lasswade where what little timber there was would have been mainly planted.

The duties of the forester were principally the protection of the woods in his charge and secondly, the supervision of their management. Foresters were required to take action against people found cutting green wood contrary to the acts passed by the baron courts (107). Presumably they ensured that the enclosures which protected the woods were maintained in a sufficiently good condition to keep out animals which might otherwise have browsed the leaves and damaged the bark of the trees. They supervised the cutting of timber for or by the tenants and feuars for house-building and other necessities (108), and in the barony of Lasswade in Midlothian, where the planting seems to have been carefully maintained for the supply of pit-props to the estate's coal mines, the foresters had the additional duty of superintending the transport of the timber to the coal shafts (109).

Holding a position comparable to the forester on some estates was the moss griever, whose task was to ensure the conservation and efficient utilisation of the estate's peat resources. The duties of the moss grievers on the Panmure estates have been recorded in some detail. They included responsibility for the peat that the tenants were required to cut, stack and transport to the proprietor's house (110). The griever also had to ensure that tenants who were allowed a specific number of days peat-

107. S.R.O. Airlie muniments GD 16 30 11 (1692), 16 27 124 (1641)

108. The Records of Aboyne ed. Chas. 11th Marquis of Huntly, Earl of Aboyne New Spalding Club (1894) p.284 (1638)

109. S.R.O. Clerk of Penicuik muniments GD 18 722 (1684)

110. S.R.O. Dalhousie muniments GD 45 18 285

cutting did not start before sunrise or finish after sunset on each day, and that they were not assisted in the work by anyone (111). On the Ross of Arnage estates near Ellon in Aberdeenshire, the moss griever was required to see that the tenants cut back their peat banks evenly and not in random holes, so as to ensure that the peat moss was consumed as slowly and thoroughly as possible (112).

Most estate officers were concerned with administering the estate as a unit and not with any specific aspect of it. The existence of these two highly specialised positions among the hierarchy of estate management emphasises the importance of timber and peat in the rural economy. These were essential commodities throughout Lowland Scotland. Peat was a wasting asset whose use had to be carefully regulated in areas which did not have access to supplies of cheap coal. Timber, natural or planted, was a valuable commodity which, if exploited in a prodigal manner, could not be replaced within one or even two generations.

This aspect of estate management is of great importance, for it demonstrates the contemporary attitudes of landowners towards the exploitation of their land, and towards the agrarian economy in general. It shows a basic concern with the frugal and efficient use of resources which were recognised as not being inexhaustible. This is an attitude which, to judge from the generally treeless state of Lowland Scotland by the seventeenth century, as commented upon by many foreign travellers (113), was not present in previous centuries. It was an attitude which

111. Ibid.

112. S.R.O. Ross of Arnage muniments GD 186 5 (1707)

113. Eg. Kirke T Tour in Scotland (1677) ed. Brown P.H. (1892)
pp.8, 15, 17, 25

was far from representing the idea of a robber economy where the one aim was to take without giving thought for the future, and in many ways it was closer to present-day conservationist ideas. As such, it marks a distinct turning point in agrarian attitudes from the medieval to the modern. The medieval attitude was characterised by a more prodigal and wasteful use of resources. This could be tolerated with equanimity with a smaller population whose agriculture was still expanding into a wilderness where such natural resources were so plentiful that their conservation was not seen to be necessary. By the seventeenth century however, such practices had depleted the timber resources of Lowland Scotland to such an extent that home-grown timber was said to supply only a hundredth part of the demand (114). Imported timber was a constant drain on the pockets of the proprietors, and on the foreign exchange of the country as a whole. It is in this light that the increased concern for planting trees, highlighted here by the appointment of specialised foresters in lowland areas, should be viewed. The reasoning behind the drive towards planting was one of hard economics rather than one of benevolence towards the tenantry or a concern for the amenity of the countryside. However, in this instance at least, the interests of landlord and tenant were not very far removed. If the peat resources of an estate ran out then the tenants would be as badly affected as the proprietor. If they had been forced to buy peat or spend more time in carrying it from a distance, the working of their holding and ultimately the payment of their rent would inevitably have suffered. This would eventually have been passed on to the proprietor. As will be considered in more detail in a later chapter, such attitudes,

114. R.P.C. 1st series VIII (1608) p.543

and the action that went with them in the realm of agricultural improvements, represented a major change in ideas towards the agrarian economy and marked the beginning of a more commercially-orientated outlook in general.

1.9 CONCLUSION

The organisation of estate management throughout Lowland Scotland appears to have been very standardised. There are no distinguishable differences between large or small estates, or between estates whose economy was largely pastoral and those where arable farming predominated. The hierarchy of management formed a link between the social structure of rural society and the physical layout of the estate itself, and in its operation it appears to have been designed to serve rural society as a whole rather than merely the landowners.

The baron court has been seen as an instrument by which the proprietor could oppress his tenants (115). However, the organisation of estate administration, as described above, suggests that in its general form (though not necessarily in particular instances) it was designed to safeguard the rights of the community from the proprietor down to the cotter. The baron court provided an impartial meeting place where disputes between tenants could be judged by groups of their fellows and in which, in theory, the proprietor was himself only another litigant (116). Virtually all the estate officers in the lower levels of the hierarchy and

115. Handley J.E. (1953) *op.cit.* p.89

116. McIntyre P. (1958) *op.cit.* p.375

frequently the higher positions of baillie, chamberlain and factor, were filled from the ranks of the tenants. The appointment of those men with whom the tenants were most liable to come into contact were sometimes specifically made only with the prior consent of the tenants. It might be argued that officers like the factor and chamberlain would inevitably be "laird's men" on account of the salaries which they received from the proprietor, but in a great many, perhaps a majority, of cases they were tenant farmers themselves, farming holdings which were sometimes substantial but which were usually no larger than many others on the estate. They were thus subjected to the same pressures and misfortunes as their neighbours and consequently they were all the more likely to have been sympathetic towards the problems of their fellows.

The birlaymen, on whom much of the day-to-day business of the estate devolved, appear to have performed their duties for little or no financial reward and the operation of the birlay court seems to have been entirely for the benefit of the tenants as a whole. The number of birlaymen who were appointed on many estates would surely preclude their all being toadies, especially as the other tenants might have a say in their appointment which was, in any case, short term. Also, the way in which birlaymen were appointed in equal numbers for each party in cases of valuation, no matter whether the dispute was between two tenants or a tenant and the proprietor, indicates that every effort was being made to be as fair as possible to the tenant.

It has frequently been claimed that the interests of proprietor and tenant in Scottish agrarian society were irrevocably opposed and that a state of permanent class-struggle existed (117). Nevertheless, in the

long term, both landlord and tenant were bound together by their common dependence upon the same basic resource, the land. The structure and operation of estate administration in seventeenth-century Lowland Scotland appears to have been geared towards making this relationship as workable as possible.

When considered from the point of view of agrarian change, there was nothing in the structure of seventeenth-century estate administration which acted as a barrier to agricultural improvement. Indeed, the whole organisation appears to have been very flexible. It was able to accommodate itself to the needs and demands of proprietors who were bent on improving their estates, and who were operating on a highly commercialised basis, as well as serving the needs of proprietors who were content to let their estates operate at a semi-subsistence level. The same basic structure of management continued into the eighteenth century and served the later "Improvers". As has been shown, the seventeenth-century estate hierarchy could be adapted to meet new pressures such as the protection of improvements initiated by the proprietor, and the conservation of resources such as peat and timber which were in short supply. Seventeenth-century estate management was neither backward or stagnant necessarily, but the impetus for change had to come from the proprietor, and the way in which the traditional hierarchy of administration was used largely reflected the outlook and attitudes of the individual landowner.

117. Ferguson W. Scotland, 1689 to the Present Vol.4 of the
 Edinburgh History of Scotland (1968) p.73
 Fullarton Col.F. General View of the Agriculture of the County
 of Ayr (1793) p.69

CHAPTER II

THE ROLE OF PARLIAMENTARY LEGISLATION IN AGRARIAN CHANGE

2.1 INTRODUCTION

As has been discussed in the introduction, particular aspects of agrarian change in seventeenth-century Lowland Scotland cannot always be studied due to the nature of the sources. The scarcity of source material relating to many other aspects of the contemporary Scottish economy does not always permit the external social and economic framework, within which agriculture operated and with which it interacted, to be considered. However, seventeenth-century Scottish agriculture also operated within a political framework and there is a good deal of material available for the study of the interaction between the state and agriculture. The general course of political events, particularly the occurrence of periods of unrest or stability, influenced agriculture directly, but an equally significant interaction in the long-term was the link between agriculture and Parliamentary legislation.

Legislation passed by the Scottish Parliament influenced the agrarian system directly and much of this chapter will be concerned with the effects of such statutes upon agriculture. Alternatively, the legislators were in many cases landowners themselves and were liable to be influenced by their agricultural backgrounds (1). Parliamentary legislation can

1. For instance, in the Parliament of 1695, which passed the most ..

also be used to assess the attitudes of the legislators and thus, indirectly, of some sections of rural society, towards agriculture. This is an approach which is difficult to pursue with the evidence which is available from private estate papers. In addition, such legislation forms a useful chronological framework into which other evidence for agrarian change may be fitted more meaningfully.

However, the question of the effectiveness of the Scottish legislature at this period must also be considered. The seventeenth century was a period of transition in politics as in many other aspects of Scottish society. Prior to this century, the power of the Crown had frequently been intermittent and it was often only in a small part of the country that the King's writ had any force at all (2). During the course of the seventeenth century, the control of the state over the Lowlands and, to a lesser extent, the Highlands, gradually became more effective but it was still far from being complete by the Union in 1707 (3).

If such control was insufficiently great then there would have been little that the legislature could have achieved by passing statutes at all. In Lowland Scotland before the opening of the seventeenth century, and probably for some time after, the Scottish legal system could probably have achieved little in the way of enforcing obedience to unpopular legislation. If a proprietor ignored such statutes, then he might only have

sweeping legislation for agricultural improvement of the century, there were 40 nobles and 71 shire commissioners (mostly lairds and lesser nobility) and only 61 burgh commissioners, giving landowners a substantial majority. Prior to 1689 when the Committee of the Articles was responsible for drafting the legislation, the influence of landowners would have been even greater.

2. Smout T.C. A History of the Scottish People 1560-1830 (1969) pp.94-99
3. Ibid. pp.99-106

been prosecuted with some difficulty. At times, prosecution was not even possible at all. If a tenant decided to ignore such legislation, then he would have been prosecuted only if his landlord happened to agree with its provisions and then, in most cases, the tenant would appear before the proprietor's own baron court. On the other hand, if it can be demonstrated that the legislation passed by Parliament at this period was actually put into practice, then it may be assumed that it was fulfilling a definite need on the part of those who adopted it.

With regard to the legislature itself it must be noted that, with the exception of a brief spell between 1690 and 1707, the Scottish Parliament was not analogous to the House of Commons in Westminster. In Scotland, Parliament did not have the freedom of action and debate possessed by its English counterpart. Real legislative power lay, until 1690, with the Committee of the Articles, a parliamentary committee of about forty members, appointed by the monarch from Parliament. The Scottish Parliament merely considered the bills which were drawn up by the Committee of the Articles and either accepted them or rejected them with a minimum of debate (4). As the right to appoint the members of this committee lay with the king, the monarchy exerted a much stronger influence over the Scottish Parliament than the English one at this period. A major change took place in 1689. The Revolution settlement in Scotland involved the abolition by the Scottish Parliament of the Committee of the Articles and their assumption of the full power of debate and legislative action in the Claim of Rights (5). Thus one might look for a possible change in the

4. Dicey A.V. and Rait R.S. Thoughts on the Union Between England and Scotland (1920) pp.33-42

5. Dicey and Rait (1920) op.cit. p.64

character of the statutes which were passed between 1690 and the Union of 1707 as a consequence of this new freedom.

If evidence for the encouragement of agrarian change is to be sought in seventeenth-century parliamentary legislation, it ought to be connected with the formulation of a definite policy towards agriculture. If Parliament was merely content with maintaining the status quo, it would be reasonable to expect that the acts passed by Parliament would be concerned solely with abuses of the existing system. If these were dealt with as the need arose, then there would be no discernible policy.

On the other hand, an inclination towards agricultural improvement would have required a considerable change in outlook from an attitude which was content with the old system. It would have involved a continued and directed effort towards the tackling of a particular set of problems associated with the transformation of the existing agrarian landscape. No single act could have been so wide-ranging as to satisfy all aspects of agricultural improvement. A series of statutes would have been required, dealing with separate aspects of agrarian reform and, if the obstacles to change were sufficiently great, then they might not have been removed by a single act for each area of improvement. Instead, they might have required a gradual build-up of statutes over a period of time, each act taking over from where the previous one had left off, gradually eroding away at the obstructions.

Such a series of statutes, passed over a period of time, could be justly described as representing a deliberate policy of agricultural improvement by the legislature, and would be a radical departure from a series of statutes which maintained the existing system. However, it is

equally important to discover as far as possible what the legislators were hoping to achieve by passing such statutes and the extent to which they were put into practice. If such legislation was ignored altogether, then it must be written off as well-meaning but ahead of its time. If on the other hand, there is evidence that it was used to good effect within a few years of its introduction, then there are grounds for believing that it fulfilled a definite need and demand for agrarian change.

This chapter will concentrate on a consideration of seventeenth-century Scottish parliamentary legislation and will attempt to assess its importance and effectiveness. Some of the seventeenth-century agricultural legislation has been reviewed briefly by previous writers (6) and particular attention has been paid to the late seventeenth-century improving acts. However, this legislation has never been considered in detail nor has any attempt been made to assess its effectiveness or to relate it to the evidence for agrarian change in seventeenth-century Lowland Scotland. As an introduction to seventeenth-century agricultural legislation, in order to place it more firmly in its context, some preliminary consideration of earlier legislation is necessary, however.

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6. Adams I.H. The Division of the Commonty of Hassendean 1761-1763
Stair Society Miscellany I (1971) pp.171-192
 - Caird J.B. The Making of the Scottish Rural Landscape S.G.M.
LXXX (1964) p.74
 - Conacher H.M. Land Tenure in Scotland in the Seventeenth Century
Juridical Review L (1938)
 - Hamilton H. An Economic History of Scotland in the Eighteenth
Century (1963) pp.56-57

2.2 PRE-SEVENTEENTH CENTURY AGRICULTURAL LEGISLATION

No coherent agricultural legislation emerges out of the turmoil of medieval Scottish history until the early fifteenth century when James I brought some temporary stability to the country. In his attempts at widespread reform, he included some statutes concerning agriculture. Some of the acts which were passed at this period, such as the ones prohibiting the unauthorised cutting of green wood (7), the peeling of bark (8), the breaking of orchard dykes (9), the destruction of rabbit warrens and dovecots (10), and the killing of rooks (11), were to set the pattern of legislation for the next two hundred years or more.

Perhaps the most interesting of these early statutes was the act of 1426 which required that every man tilling with a plough of eight oxen (i.e. in theory, holding a ploughgate of land) should sow each year a minimum of one firloot of wheat, half a firloot of peas and 40 beans (12). The purpose behind the sowing of the wheat is obscure, but the mention of peas and beans, confirmed by references in later statutes (13), indicates that the advantages of the sowing of legumes for maintaining soil fertility were known at this time. However, the quantities which were prescribed appear to have been merely token ones. Half a firloot of peas would serve to sow just over an eighth of an acre, according to Skene

7. A.P.S. II (1424) p.7

8. Ibid.

9. Ibid.

10. Ibid.

11. A.P.S. II (1424) p.6

12. A.P.S. II (1426) p.13

13. A.P.S. VIII (1685) p.494

of Hallyards' estimation of the quantity of peas sown per acre (14), and 40 beans would sow a mere garden plot. In relation to a ploughgate whose supposed extent was 104 Scots acres, and which might have had perhaps a third of its acreage in infield (15), the area of land affected is minute. The enforcement of this act was beyond the ability of the state, as was later admitted (16). It relied upon landowners to prosecute their own tenants and only offered to prosecute landowners who did not sow the crops on their own demesnes. This act must be viewed merely as a good intention, and later statutes indicate that it had no real effect (17). By the time that sufficient records become available in the early seventeenth century, it is clear that while both peas and wheat, and in some cases beans, were grown extensively in areas which were best suited to them and in quantities far in excess of those mentioned in the statute, in many other areas these crops were not cultivated at all (18).

Some of the fifteenth-century acts might be interpreted as attempts to promote agricultural improvement. One such statute was that of 1457 which required all landowners to ensure that their tenants planted trees, grew hedges and sowed broom on their holdings (19). However, nothing radical was being advocated apart from the attempt to maintain supplies of timber and again, to judge by references in later statutes, its effect was minimal (20). Most of the acts of this period were concerned with

14. Skene of Hallyards Manuscript of Husbandrie ed. Fenton A.

Ag.H.R. 11 (1963) p.68

15. Except in a few dubious cases, peas, as will be discussed in Chapter 3, were invariably an infield crop.

16. A.P.S. VIII (1685) p.494

17. A.P.S. VIII (1685) p.494

18. Eg. Sir Robert Sibbald Discourse Anent the Improvements May Be Made in Scotland for Advancing the Wealth of the Nation (1698)

19. A.P.S. II (1457) p.51

correcting, or at least attempting to correct, abuses in the existing system. Among these were the act of 1481 which forbade any persons going to and from the king's army to destroy crops and grass by taking short-cuts (21), and the two statutes of 1449 which provided for the continuing occupancy by the sitting tenants of lands alienated by lay proprietors (22), and of ecclesiastical lands where the see had fallen vacant (23). A good many of the acts passed during this century, such as those quoted above, were concerned with attempting to improve the condition of the tenantry.

This pattern continued throughout the sixteenth century, with the acts against the cutting of green wood (24), the burning of heath at certain times of the year (25), the sowing of broom (26), and the damaging of dovecots, rabbit warrens and other property (27) being renewed.

Many of these acts were merely re-enactments of the fifteenth-century statutes, either unchanged or only slightly amplified. There is nothing in them to suggest that any real attempt was being made to introduce legislation which would materially alter the existing agrarian system. Legislation came in fits and starts relating to periods of political stability. There was a burst of legislation in the 1530s under James V and gaps during the reign of Mary and the regencies of James VI when power politics assumed such an importance as to divert attention almost

20. A.P.S. VII (1661) p.263

21. A.P.S. II (1481) p.132

22. A.P.S. II (1449) p.38

23. Ibid.

24. A.P.S. II (1535) p.343

25. A.P.S. II (1503) p.242, III (1567) p.35

26. A.P.S. II (1535) p.343

27. A.P.S. II (1535) p.344

entirely from agrarian and economic matters. The majority of James VI in 1587 ushered in a period of peace and prosperity which was marked by a great increase in the attention given by Parliament to agriculture. Some 16 acts relating to agriculture and forest management were passed between 1587 and 1617, compared with only 11 during the previous ninety years.

Despite this increased activity, there was little that was new in the legislation of James VI's reign. The most significant statutes were a series of acts relating to teinding. The acts were concerned with the inconvenience and damage sustained by tenants and small proprietors in the tending of their crops by whoever had the right to the teinds. The crops had to remain stacked in the fields after they had been harvested until the owner or tacksman of the teinds came to draw them. If they delayed in doing this and the weather was bad, there was a real danger that the whole crop might be destroyed. The series of five acts passed between 1579 and 1617 gave heritors and tenants increased powers to require the owner or tacksman of the teinds to come and draw them within a specified period following the harvest, or to take the consequences (28). The final act of 1617 stipulated that eight days after harvesting had ended, the heritors and tenants were given power to teind the crop themselves if the owner of the teind had not done so, and to carry off their sheaves to the barnyard leaving the teind behind. They were required to protect the teind corn from damage by animals for a further eight days, and if after that the owner had not collected his teinds, they were

28. A.P.S. III (1579) p.139
 A.P.S. III (1587) p.450
 A.P.S. IV (1606) p.286
 A.P.S. IV (1612) p.471
 A.P.S. IV (1617) p.541

to be free of all responsibility for them. It was also stipulated that if the owner of the teinds did not live locally, he was to appoint someone from the neighbourhood to act as his factor and teind the crop for him (29).

These acts, if they were adequately enforced, must have corrected some serious abuses of the existing system, but they did little to alter it fundamentally. The conclusion must be that prior to the seventeenth century there was no significant attempt on the part of the legislature to alter the basic structure of agriculture in Lowland Scotland in any way.

2.3 PARLIAMENTARY LEGISLATION 1600-1660

It was not until well on into the seventeenth century that the first indications of a desire for change became apparent in the type of legislation which was passed by Parliament. Many of the acts which were passed in the first two decades of the seventeenth century continued the tradition of the legislation of previous centuries. For instance, in 1607 and 1617, the old acts concerning the cutting of green wood and the burning of heath were re-issued (30). In 1600 an act was passed to check encroachments on the King's commonties (31). Any person who had appropriated part of a Crown commonty and had converted it to arable within memory of man was to restore it or face prosecution. The implication that Crown, and probably other commonties, were being encroached upon at this period suggests that even at this fairly early date there may have been pressure on common grazings and a possible need to divide them. The

29. A.P.S. IV (1617) p.541

30. A.P.S. IV (1607) p.373, IV (1617) p.537

31. A.P.S. IV (1600) p.228

act shows, however, that the official view favoured their retention as commonry and this attitude was not to alter for nearly fifty years.

The pace of change began to accelerate slowly during the 1630s and 1640s. In 1633, the old problem of teinds, the drawing of which had probably always involved inconvenience and potential damage, was finally solved. The difficulties associated with teinding had probably multiplied since the Reformation with the teinds falling increasingly into the hands of laymen and being leased out indiscriminately. The teind acts of the late sixteenth century, as has already been suggested, represented a tidying up of the old system of teinding rather than a real change. The teind act of 1633 (32) was an entirely new departure which provided for a valuation of the teinds as a fifth part of the rent of the lands and not as a tenth part of the actual produce in any year as under the previous system. This meant that tenants could gather in their crops immediately after harvest and pay the teinds later as a fixed sum in grain or money. This removed the danger of damage to their crops through their lying out in the fields until the teind owner came personally to draw his teinds. As the teinds fell increasingly into the hands of the proprietors, the payments gradually became a part of the tenants' rents.

In 1641 an unusual act was passed specifically for the benefit of the heritors whose lands were adjacent to the Pow of Inchaffray, a sluggish streamlet draining a flat, shallow valley running westwards along the edge of the Perthshire Highlands for seven miles or so to join the Earn south of Crieff (33). The heritors complained that their lands were

32. A.P.S. V (1633) p.31

33. A.P.S. V (1641) p.420

frequently flooded and their crops and grass damaged. They subscribed to a mutual bond, which was ratified by Parliament, in which they agreed to cut and clear the channel of the stream to a given depth and width and keep it free of weeds in order to reduce the risk of flooding. This was an interesting example of mutual co-operation but the most unusual feature of it was that the extreme step was taken of bringing it before Parliament for ratification. It is possible that other schemes of a similar nature were being quietly carried out without recourse to Parliament and leaving no documentary evidence.

A more exotic proposal was put before Parliament in 1645 when a Signor d'Amey proposed the introduction of Indian Corn - presumably maize - into Scotland (34). The virtues of this plant were extolled; its yield was four times that of oats, it was less liable to damage by wind, rain or frost, it enriched the soil and its refuse was suitable for fattening pigs. If maize was the crop referred to then, considering its climatic limitations (35), it is hardly surprising that this proposal appears to have met with no response. However, it does demonstrate that innovations and radical ideas about agriculture which are known to have been in circulation in other parts of Europe in the first half of the seventeenth century (36), were actually penetrating to Scotland even though some, such as this one, were inapplicable in a Scottish context.

In 1647 the first real improving act was passed by the Scottish

34. A.P.S. VI(I) (1645) p.372

35. Watson J.W. *General Geography* (1967) p.350. It is not economic to grow maize at the present day where the mean summer temperature falls below about 66 degrees Fahrenheit

36. Van Bath B.H. *The Agrarian History of Western Europe A.D. 500-1850* (1963) pp.199-203

parliament (37). Its date, sandwiched between acts relating to reparations for the damage caused by the Parliamentary army in the campaigns of 1645 (38), and others relating to the Cromwellian occupation of the 1650s (39), is a significant one. In later chapters, evidence will be advanced which points to an expansion of Scottish agriculture in the earlier part of the seventeenth century, particularly in the 1630s and early 1640s. This was abruptly checked by the Civil Wars and was not to resume until after the Restoration in 1660. This act may well relate, a little belatedly, to this period of expansion.

The act was concerned with the division of commonties on a limited basis, and was the forerunner of the more sweeping 1695 division of commonty act which will be discussed below. It was designed to allow land which was under-utilised as common pasture and was capable of improvement, to be converted to arable by dividing it up among the landowners who had right to it, so that "these comounties that ar most barroune may be reduced to gude corne land" (40). This attitude represents a marked departure from that of the 1600 statute concerning Crown commonties mentioned above which was concerned to keep commonties undivided and unencroached upon.

The act only applied to commonties in the counties of East, Mid and West Lothian, Lanarkshire and Ayrshire. This distribution alone would be sufficient to suggest a link between this statute and the conversion of pasture to arable by liming, a practice which is known to have

37. A.P.S. VII (1647) p.803

38. A.P.S. VI(I) (1645) pp.442, 443

39. A.P.S. VI(II) (1650) p.745b

40. A.P.S. VII (1647) p.803

become standard in parts of these counties from the late 1620s and early 1630s (see Chapter 3). However, the act in fact states that these were the counties "where store of lymbe (lime) and other failzie (fertilizer) is" (41).

Divisions of commonty were possible without recourse to this act, providing that all the landowners who had an interest in a commonty were agreed upon its division. For instance, the commonty of Meggis Myre, in Dumfries parish, had been divided in 1621 (42) and the commonty of Gladsmuir, in which the Earl of Melrose and the burgh of Haddington had rights, in 1624 (43). The importance of the act lay in the fact that it allowed the division of commonties within the specified counties without unanimous agreement on the part of all the proprietors concerned. Now only a majority of the heritors had to be in favour of a division for it to take place.

This act immediately set the Scottish approach to the division of common pasture apart from that taken in England, and the 1695 division of commonty act was to continue it. In both of these acts, the responsibility for supervising the divisions which resulted was given to the Court of Session and the actual division proceedings were conducted by local Sheriffs and Justices. This was a more efficient system than the English one where a separate act of Parliament was necessary for each division (44). The advantages of the Scottish system have been discussed by Adams (45), and the long-term result was the disappearance of common

41. A.P.S. VII (1647) p.803

42. S.R.O. Fraser charters GD 86 460, 461 (1621)

43. R.P.C. 13 (1624) p.424

44. Lord Ernle English Farming Past and Present 6th ed.(1961) pp.161-7

45. Adams I.H. (1971) op.cit. p.172

pasture from Scotland while some $1\frac{1}{2}$ million acres of common still remain in England and Wales today (46).

The commonities in which a number of landowners had an interest were specifically excluded from the act (47). This suggests that there was opposition to the statute from some sections of the landowning classes and that certain landowners were sufficiently influential to have themselves excluded from the act entirely. This is the first of many indications in the wording of the later seventeenth-century statutes that there was substantial opposition to legislation for agricultural improvement both in Parliament and among landowners in general.

The effectiveness of this act was hampered by the political troubles of the times. The statute was passed by the Civil War Parliament without the assent of the monarch, and consequently, it was among those which were revoked by the Act Rescissory of 1661 (48). The period between 1647 and 1661 was such a turbulent one that there must have been little opportunity for landowners to devote themselves to the improvement of their estates by such means. There is no definite example of a division of commonity which took place during this period as a result of this act. Two known divisions of commonity did occur at this time within the specified counties: the White Common of Culter in Lanarkshire was divided in 1659 (49), and Cambusnethan muir, in the same county, at about the same time (50). However, it is not clear in either case whether the heritors

46. Ibid.

47. They were the Earls of Haddington, Dalhousie, Roxburgh, and London, the Duke of Hamilton and the lairds of Innerwick and Ruchlaw.

48. A.P.S. VII (1661) p.17

49. Hay of Craignethan's Diary 1659-1660 ed. Reid A.G. S.H.S. (1901) p.88

50. The Coltness Collections Maitland Club (1842) p.58

were unanimous in their desire to divide the commonities or whether they had recourse to the 1647 act. The problem of the division of commonities was not to be taken up again by the legislature until 1695, but the general opinion of landowners with regard to commonities appears to have moved further towards their division in the period 1661-1695 as is shown by the number of divisions which took place by private agreement during this period (see Chapter 4).

2.4 THE LATER SEVENTEENTH CENTURY 1661-1700

The limited division of commonity act of 1647 marked the first step in a definite trend towards legislation for agricultural improvement although, following this statute, there was an interruption of thirteen years during the Civil Wars and the Cromwellian occupation. In the forty years that followed, this trend was taken up again and was greatly developed. A series of acts was passed between 1661 and 1700 legislating for agricultural improvements, indicating that for the first time in Scottish history a definite policy of agrarian reform was being consistently pursued. The acts by which this policy was manifested are summarised in Table 2.1. The culmination of this policy was reached in 1695 with the division of commonity and runrig acts which, when fully implemented in the following century, allowed the transformation of much of the rural landscape of Scotland within the space of two or three generations. The policy appears to have been thought out and pursued with great care. Just as the 1695 division of commonity act built on the preceding act of 1647, so did the 1695 division of runrig act represent the last of a series of statutes

TABLE 2.1 SUMMARY OF THE LATE SEVENTEENTH-CENTURY
IMPROVING STATUTES

1633	Assessment of teinds act
1641	Pow of Inchaffray drainage act
1645	Proposal to introduce Indian Corn
1647	Limited division of commonty act
1661	General enclosure act - sharing of costs on marches and diverting of roads
1663	Export of grain and cattle act
1669	Fencing of arable land by roadsides act
1669	Act for straightening marches to facilitate enclosure
1685	1661 and 1669 enclosure acts re-issued
1685	Act for sowing peas and preventing the removal of turf
1686	Act for winter herding of animals
1695	Act for preservation of meadows and pastures adjacent to sand dunes
1695	Division of runrig act
1695	Division of commonty act
1696	Second Pow of Inchaffray drainage act

which gradually made enclosure and consolidation easier for those landowners who wished to undertake them.

A further characteristic of late seventeenth-century legislation was its concern, almost solely, with the problems of the landowners. In contrast to the preceding two centuries, there was no attempt, after the 1633 teind act, to introduce legislation which was designed to improve the condition of the tenantry directly. This could well be an indication that the late seventeenth-century Parliament was less constrained by the direct control of the monarchy than in previous centuries and had more freedom to legislate in the interests of its own members.

The accent of the legislation of this period was on a fairly limited set of improvements. The emphasis was upon enclosure and the planting of trees, the two being linked by the need to protect growing trees from animals in an open-field landscape, and upon the consolidation of estates. Nevertheless, this emphasis was a significant one, for enclosure and consolidation lay at the very heart of agricultural improvement from an open-field system and had to come before it was worthwhile to undertake other improvements.

The first of these improving acts was passed in 1661 (51). The preamble to the statute mentioned the country's need for home-grown timber, implying that enclosures were essential for the protection of planting. It also referred to the advantages of enclosures for crops and animals. Every heritor whose lands were worth £1,000 of annual rent or more was required to enclose at least four acres of land a year for the next ten years. Heritors whose lands were worth less than this were to

enclose a smaller acreage proportionally. The wording of the act is a little ambiguous. It states that landowners were to "enclose four acres of land yearly at least and plant the same about with trees ... at three yards distance" (52). This could be interpreted to mean that the whole of the enclosed land was to be planted. Alternatively, the reference in the preamble to the advantages of enclosures for crops and pasture suggests another interpretation, namely that the enclosed land was to be planted with a border of trees and used for other purposes as well as planting. On balance, considering contemporary language usage and the evidence for widespread enclosure for a variety of purposes in the years following the passing of this statute (see Chapter 5), it seems more likely that the second interpretation is correct (53). The legislation may be taken as having been designed to encourage enclosure generally.

As an incentive to proprietors to carry out the provisions of the act and to make their task easier, some inducements were added. Where the course of roads interfered with the progress of enclosure, the heritors concerned were given power, under the jurisdiction of Justices of the Peace, Sheriffs and Lords of Regalities, to divert the roads by up to 200 ells (just over 205 yards) to their convenience. When a heritor desired to enclose upon a march with an adjacent heritor he was given full power to compel his neighbour to share the cost of enclosure along the boundary. Land which was enclosed under this act was also freed from taxation for nineteen years as an added incentive, and penalties for the breaking of hedges and dykes and trespassing within enclosures

52. Ibid.

53. H.M. Conacher (Land Tenure in Scotland in the Seventeenth Century *Juridical Review* L 1938) favours the other theory

were laid down.

Cases of enclosure in which recourse was had to the special provisions of this act for altering the course of roads and sharing the cost of enclosure on a march were probably dealt with mainly through the local sheriff courts. It will probably be among the records of these courts that most of the evidence relating to the success or failure of this act and many of the other late seventeenth-century improving acts will be found. However, several cases were sufficiently contentious to have passed on to higher authorities and were dealt with by the Privy Council.

The provision for two heritors sharing the cost of enclosure along a march was cited by Lord Belhaven, the well-known late seventeenth-century writer on agricultural improvement, in 1702, in a case which will be discussed below with reference to a later statute (54). The part of the act dealing with the diversion of roadways was used by a number of proprietors. The examples which have come to light in the Privy Council records are shown in Table 2.2. As it has not been possible to examine the late seventeenth-century sheriff court records, a major undertaking in itself, it can only be suggested that the cases which were brought before the Privy Council may only have represented a fraction of those which were actually carried out and that further evidence may well remain to be uncovered.

The examples which have been cited above were concerned only with the detailed provisions of the act. It is likely that only a minority of landowners would have required to resort to them if they were enclosing parts of their estates. If this is the case, then it remains to find evidence

54. S.R.O. Hay of Belton muniments GD 73 1/31 (1703)

TABLE 2.2 INSTANCES IN THE RECORDS OF THE PRIVY COUNCIL
WHERE THE 1661 ACT FOR DIVERTING ROADWAYS TO
FACILITATE ENCLOSURE WAS USED

Year	Landowner	Locality	Purpose of enclosure
1663	John Boswell	Kinghorn, Fife	?
1664	Earl of Lothian	Fernihurst, Roxburghsh.	?
1665	Sir Archibald Cockburn	Lanton, Berwicksh.	Planting and enclosing
1667	Sir Thomas Wallace	between Irvine and Ayr	?
1667	Earl of Crawford	Clattiden, Fife	?
1668	Earl of Northesk	Errol, Perthsh.	Enclosing and planting
1672	Robert Carnegie	Newgait, Arbroath	Enclosures round house
1672	James Dunlop	Dunlop, Ayrsh.	?
1673,	Sir Patrick Nisbet	Dean, Edinburgh	?
1673	John Craigie	Cookston, Brechin	Enclosures round house
1675	Sir John Clerk	Newhall, Midlothian	Enclosing and planting
1680	Patrick Murray	Livingston, W.Loithian	A park
1681	John Hope	Hopetoun, W.Loithian	?
1682	Sir James Ruchead	Inverleith, Edinburgh	Orchard
1683	John Chalmers	Gadgirth, Ayrsh.	?

of widespread enclosure outwith these special cases if it is to be maintained that this act had any effect. Chapter 5 will review the evidence for a considerable expansion of enclosure which took place throughout Lowland Scotland approximately between the Restoration and the end of the century. The evidence mainly comes from estate accounts and other related private papers and it is impossible to relate it directly to the 1661 act. It can only be suggested that, as most of this enclosure movement took place after the 1661 act, although it may have had its beginnings prior to the Restoration, there was to some extent a direct cause and effect and that the act encouraged a considerable increase in the amount of enclosure which was being carried out. This would suggest that the 1661 act achieved a considerable measure of success although it is impossible to demonstrate it directly and it would be simplistic to suggest that this statute was the only possible influence at work.

Two years later, in 1663, Parliament gave official sanction to the growing trend towards the export of agricultural produce, which will be discussed further in Chapter 9, by proclaiming the export of grain, meat and live animals by sea to be lawful at all times unless declared otherwise by the Privy Council in time of dearth (55). Trade legislation of this sort was usually handled, in an irregular and short-term manner, by the Privy Council. The fact that Parliament now passed this long-term act is an indication that production at home was increasing and had by this time reached such levels that the export trade had become a fairly stable and regular one.

In 1669, two more statutes were passed which were designed to

55. A.P.S. VII (1663) p.467b

build upon the enclosure act of 1661. The first, as part of a general act concerning the repair and maintenance of roads, required that arable land adjacent to roadways was to be fenced off with a dyke and ditch or a hedge (56). This was a sensible enough precaution to safeguard crops, but it does not appear to have been a common practice prior to this date. The act allowed two years for the enclosure to be completed and required Justices of the Peace to impose fines for every ell which remained unenclosed after this time had expired. That it had some effect in the twenty years that followed is suggested by Thomas Morer in his account of a tour in Scotland in 1689 (57). Morer commented on the absence of enclosures in Lowland Scotland in general, as did many English visitors at that time. However, he mentioned that "here and there they raise out of the road some little continued heaps of stone in the nature of a wall to secure their crops from the incursions of travellers" (58). Morer's somewhat scathing description suggests that only a token compliance with the act may have been made in many cases.

The other act which was passed in this year provided that where a heritor wished to enclose on a march between his own property and that of another heritor and the work was impeded due to the irregularity of the boundary or because the ground on the march was too marshy to take a dyke, the heritor could apply to the local Sheriff, Justice of the Peace, or Baillie of Regality to visit the ground (59). They were given power to straighten the marches by an excambion or exchange of parcels of land of

56. A.P.S. VII (1669) p.575

57. Thomas Morer *A Short Account of Scotland*, 1689 in Brown P.H. *Early Travellers in Scotland* (1891) pp.266-290

58. Ibid.

59. A.P.S. VII (1669) p.576

equal value between the landowners. If this was not feasible, financial compensation was to be paid to the heritor who gave up most land. This statute can be seen as a forerunner of the 1695 division of runrig act in that it encouraged proprietors to make a start on the consolidation of their estates.

Again, if landowners acted upon this statute to any great extent, the evidence must be sought principally among the records of the sheriff courts. However, as in the case of the 1661 act, some of the cases involving the statute proved sufficiently troublesome for them to go as far as the Privy Council. The act was used in 1682 by Sir James Ruchead of Inverleith for straightening the boundary of an orchard (60), but the most interesting case which has so far come to light occurred in 1703 between Lord Belhaven and Lord David Hay of Belton (61). The former was enclosing the mains of his estate at Biel in East Lothian and the march with Hay's property was "so crooked that it is almost like a bow" (62). The salient of Hay's land cut into Belhaven's estate and Belhaven tried to interpret the act as meaning that he could annex this semi-circle of land by re-drawing his march straight across. Hay protested, naturally enough, claiming that many of Belhaven's existing enclosures solely on his own lands "runs unequal and crooked in many severall places .. So that his lordship's designs appears to be more to have a pairt of Lord David Hay's ground than the regularitie of his oun park dyk" (63). The case eventually went in Belhaven's favour but an exchange was

60. R.P.C. 3rd series VII (1682) p.627

61. S.R.O. Hay of Belton muniments GD 73 1/31 (1703)

62. Ibid.

63. Ibid.

arranged in which Hay received a parcel of ground from another part of Belhaven's estate of almost equal extent, the difference being only one acre or so for which, presumably, Hay was compensated. This particular case is interesting as it shows one of the advocates of improvement of the later seventeenth century actually making use of the improving legislation to facilitate the enclosure of his estates.

Following this act there was a pause and it was not until 1681 that any new legislation relating to agricultural improvement was passed. In that year two separate acts for the division of specific commonties were passed. One was concerned with the commonty of Selkirk in which the burgh of Selkirk and the Earl of Roxburgh had interests (64), and the other with the burgh of Glasgow, which desired to parcel out its common muir in feu-ferme tenure (65). The reason behind these two special acts was probably related to the fact that commonties in which royal burghs had interests were specifically excluded from the limited division of commonty act of 1647. The reasons for the exclusion of royal burghs from this act and from the 1695 division of commonty and runrig acts were probably associated with the fact that burgh land was in itself, theoretically, common land owned by the burgh as a community and not by individuals. In the case of a division of commonty in which a royal burgh shared an interest with a neighbouring proprietor, or even where the land was owned by the burgh and was common only to the burgesses, the problems involved in getting all the burgesses to agree to a division may have been so great that it was thought better to exclude royal burghs

64. A.P.S. VIII (1681) p.419

65. A.P.S. VIII (1681) p.431

from any general statutes. The problem did not arise with burghs of barony as a single proprietor would generally own the land on which the burgh stood. That divisions of commonty in which royal burghs had rights were indeed possible is shown by the case of the commonty of Shieldgreen in which the burgh of Peebles had an interest (66). The division of the commonty was proposed in 1665 and agreement was reached among the burgesses. Eventually, the interest of the other proprietor involved was purchased and the burgh acquired the commonty en bloc, but the burgh had been prepared to conduct a division. The earlier division of the commonty of Gladsmuir in which the burgh of Haddington had rights has already been mentioned (67). So, divisions of common-ties in which royal burghs were concerned were not unknown, but in general they were probably harder to arrange than ordinary divisions.

In 1685, the only act which was concerned with improved crop rotations was passed (68). The act mentions the advantages of sowing peas and beans as a means of maintaining soil fertility. The statutes of James I and II were referred to and it was admitted that the quantity of legumes which they had required to be sown were too small. It was stated that, in many places, the legislation had been ignored and that in place of sowing legumes, farmers were accustomed to dig up turf from arable land and meadow ground and mix it with manure for making compost, to the detriment of the land from which the turf had been taken. Aberdeenshire was mentioned specifically in this context and probably

66. Records of the Burgh of Peebles 1652-1714 Scot.Burgh Rec.Soc. (1910) p.65

67. R.P.C. 13 (1624) p.424

68. A.P.S. VIII (1685) p.484

not by chance. An examination of tacks for the north-eastern Lowlands, including Aberdeenshire, for the period 1660-1685 shows that in many areas tenants were specifically forbidden by their landlords to cut turf from land other than commonry (69). However, it appears that Parliament had to some extent missed the point in attributing this practice to the absence of the cultivation of legumes. As will be suggested in Chapter 3, it is more likely that this practice had continued in the North East due to the absence of local sources of lime as an alternative and superior means of maintaining soil fertility. It is significant that the practice of paring turf from cultivated land for making compost does not appear to have been general in the areas which are known to have adopted liming as a standard practice in the 1620s and 1630s (Chapter 3).

The act required all farmers in Aberdeenshire to sow a twentieth part of their infields with peas or a mixture of peas and beans, unless their land lay at high altitude in which case a thirtieth part was permissible. This was still not a very large quantity, but it was far greater than that which had been stipulated in the fifteenth-century acts referred to above. Even so, the requirements of the new act were far from representing a complete legume course throughout the infield, and the long-term effect of such a small area of legumes on the soil fertility of the infield as a whole must still have been limited. The fact that attempts were still being made to enforce the sowing of peas generally suggests that there was a considerable gap between theory and practice with

69. Eg. S.R.O. Haddo muniments GD 33 53/48 4 (1669)
 S.R.O. Skene of Ruberslaw muniments GD 244 4 (1685)
 S.R.O. Forbes muniments GD 52 312 (1663)
 S.R.O. Dalhousie muniments GD 45 18 412 (1667), 20 9 (1666)
 S.R.O. Guthrie muniments GD 188 3 (1654)

regard to improved agriculture. In theory, peas were desirable on account of their nitrogen-fixing properties but in practice, as was generally recognised by the later improvers, peas were a very uncertain crop in a wet, short summer, particularly at high altitude (70). If the seventeenth-century legislators were aware of this, and the amount of peas that was grown in parts of Lowland Scotland suggests that they should have been (Chapter 3), then they appear to have taken no account of it.

In 1685, the act of 1661 in favour of enclosure was renewed (71). The period of tax relief on enclosed land was extended for a further nineteen years and the penalties for the destruction of planting, the breaking of dykes or trespassing within enclosures, were re-published. In the following year another act was passed for the indirect encouragement of proprietors who were enclosing their land (72). It was the standard practice, after the harvest had been led in, to throw down any temporary enclosures on the arable land of the tenants and to let their animals pasture over the arable without any real attempt at herding them, to gain what nourishment they could from the stubble (73). Such a practice was stated in the act to be detrimental to hedges and enclosures with young planting as well as churning up the arable land unnecessarily. The act for winter herding required that all animals should be herded by day in winter and should be housed or folded at night.

70. Sinclair, Sir John *An Account of the Systems of Husbandry Adopted in the More Improved Districts of Scotland* (1813) p.151

Robertson J. *General View of the Agriculture in the Southern Districts of the County of Perth* (1794) p.34

71. A.P.S. VII (1685) p.488

72. A.P.S. VIII (1686) p.595

73. Handley J.E. *Scottish Farming in the Eighteenth Century* (1953) p.70

It is not certain to what extent, if at all, this act was adhered to by tenants and proprietors in general, but the very passing of the act is another indication that the opinion of at least a section of the landowning element in Parliament was steadily moving away from the old system where many of the most important farming practices involved co-operation on the part of the tenants. In this case, the indiscriminate throwing open of the arable after harvest had been necessitated by the prevalence of fragmented holdings in runrig which had made it difficult, if not actually impossible, for each tenant to graze his animals solely on his own stubble. This act, providing for the controlled herding and housing of stock, was a preparatory step for the 1695 division of runrig act in some respects and may also have been an indirect help to proprietors who desired to remove tenant runrig on their lands by eroding away the co-operative practices associated with it.

Following this there was a lull in the passing of improving legislation for nine years until 1695 when the late seventeenth-century policy of agrarian reform culminated in three acts, two of which were sweeping in their scope and of major importance, providing as they did, the framework within which most of the improvements of the eighteenth century were carried out.

The most limited of these acts, but still a significant one, was the statute for the preservation of meadow land and pasture lying adjacent to sand hills (74). The act was the direct result of the overwhelming of the barony of Culbin in Moray by sand in 1694 (75). It was thought that the

74. A.P.S. IX (1695) p.452

75. Rampini C. A History of Moray and Nairn (1897) p.245

principal cause of this disaster had been the uprooting of grass, juniper and broom on the adjacent sand dunes. The plants had bound the surface of the dunes and prevented them from shifting in high winds. The pulling of grass and scrub on sand dunes was forbidden in an attempt to prevent similar disasters from happening in the future. As a piece of conservationist legislation, this act was remarkably ahead of its time, and it remains on the statute book to this day (76).

The first of the acts of major importance which were passed in this year was the "Act anent lands lying run-rig" (77). The preamble to the statute mentioned that lands lying runrig were a disadvantage and the system was described as being "highly prejudicial to the policy and improvement of the nation by planting and enclosing conform to the several acts and laws of Parliament made thereanent" (78). To remedy this, it was provided that wherever lands belonging to different heritors lay in runrig, either party was entitled to apply to Sheriffs, Stewards, Lords of Regality or Justices of the Peace for a division of the lands.

The act was specifically confined to what Dodgshon has termed "proprietary runrig" (79) which occurred where the lands of different proprietors were fragmented and intermixed. Tenant runrig, where the land was owned by a single proprietor but lay runrig among his tenants, did not require to be included in this act because, in theory, such land could be consolidated out of runrig whenever the proprietor thought it

76. H.M.S.O. Index to the Statutes I 45

77. A.P.S. IX (1695) p.421

78. Ibid.

79. Dodgshon R.A. Agricultural Change in Roxburghshire and Berwickshire 1700-1815 Unpublished Ph.D. thesis University of Liverpool (1969) p.62

expedient. However, the fragmentation of land ownership may often have been so great that proprietary and tenant runrig were intimately inter-mixed (80). In such a situation, the removal of tenant runrig might not have been a worthwhile undertaking until the land had been consolidated out of proprietary runrig.

Two points should be noted concerning this act. The first was that proprietary runrig could be divided before this statute was passed simply by all the parties concerned agreeing to the division. An instance of this occurred in 1693 when the lands of Gunsgreen in the parish of Ayton in Berwickshire were divided (81). The heritors were two sisters, Elizabeth and Robina Lauder, who had received their lands in runrig as heirs portioner to their father, Robert. The lands were divided by agreement between the sisters under the supervision of a sheriff's officer with a body of fifteen neighbours to give advice. Secondly, the legislation was in no sense a direct enclosure act. There is no mention that the land which was to be consolidated from runrig should be enclosed. However, the preamble of the act makes it clear that it was designed to facilitate the progress of enclosure by making consolidation more easy.

The second of the major acts of 1695 was the division of commonties act (82). This act did not mention the advantages which could be gained from converting commonties into property; it merely referred to "the discords which arise about commonties". However, it is evident that

80. For instance, S.R.O. Biel muniments GD 6 1780 (1722) gives an indication of the complex admixture of proprietary and tenant runrig in the barony of Dirleton in East Lothian. The situation was further complicated by some of the smaller feuars holding other land in tenancy.

81. S.R.O. Home of Wedderburn muniments GD 267 27 163 2061 (1693)

82. A.P.S. IX (1695) p.462

this act was designed to take over where the 1647 limited division of commonty act had left off. It is likely that a similar desire to utilise the land which lay in commonties to better advantage and to expand the arable area, lay behind the act. The processes which were involved in divisions carried out under this act were similar to those of the 1647 act. Any person having interest in a commonty who wished to have it divided, could raise a summons against all other parties concerned before the Court of Session, who would assess the claims of each person and then appoint a Sheriff, Justice of the Peace, or Baillie of Regality to supervise the division. It was provided that, where commonties contained peat mosses, these should not be allocated to individuals. They were to be divided separately where possible, for the benefit of all concerned, with access for each party reserved, otherwise the mosses were to remain common. Apart from this, the commonties were to be divided in proportion to the size of the contiguous estates of those proprietors who could prove their right to the use of a commonty. It should be noted that the major difference between this act and the 1647 act, apart from extending the scope of the legislation to include the whole country, was that now a single heritor could force a division of commonty whereas under the previous act, a majority of the heritors had to be in agreement before one could be undertaken.

These two far-reaching acts were substantially different in their character from the foregoing late seventeenth-century legislation. The acts which were passed between 1661 and 1689 were notable for their cautious approach. They did not attempt to go too far at any one time, and the legislation was built up step by step. The division of runrig and

commonty acts of 1695 were, by contrast, all-embracing in their scope, although they clearly owed a great deal to the earlier legislation. These two acts were not put into practice immediately. The effects of the division of commonty act have been analysed in detail by Adams (83) and enough is known concerning the implementation of the division of runrig act to make it clear that neither act was widely adopted until the second half of the eighteenth century. The cause of the immediate failure of these acts, in contrast to the evidence for the success of the legislation that preceded it, probably relates in part to the economic condition of Scotland in the years immediately following 1695. It is ironic that this year, which saw the passage of these two revolutionary statutes, and which witnessed the foundation of the Bank of Scotland (84), should also have been connected with two economic disasters of the first magnitude. 1695 saw the start of the ill-fated Darien Scheme in which Scotland had invested all her hopes of commercial expansion and a good part of her capital (85). This year was also the beginning of the series of harvest failures, known to tradition as the "Seven Ill Years", which were to bring widespread famine and destitution (86). The Scottish economy was slow to recover from these two setbacks and even after the Union in 1707, the pace of economic change was very slow (87). The times were hardly propitious for the implementation of such sweeping legislation.

If these acts are considered in relation to the Scottish agrarian

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- 83. Adams I.H. Division of Commonty in Scotland Unpublished Ph.D. thesis, University of Edinburgh (1967)
 - 84. Mackie J.D. A History of Scotland (1966) p.293
 - 85. Michison R. A History of Scotland (1970) p.302
 - 86. Ibid. p.292
 - 87. Smout T.C. (1969) op.cit. p.79

system in the later seventeenth and early eighteenth century, one cannot escape the conclusion that they were brilliantly conceived but ahead of their time. Adams has commented on the effectiveness of the simplicity of the division of commonalty act in an eighteenth-century context (88). However, in relation to the fairly slow pace of economic development at the end of the seventeenth century, these statutes seem singularly inappropriate. The previous improving legislation appears to have given careful consideration to what was practicable in the economic milieu of the time. The 1695 acts do not seem to have been drafted with the same attention to the distinction between what was theoretically desirable and what was feasible. The evidence for agricultural improvement in the later seventeenth century suggests that, although the agrarian economy of Lowland Scotland was gradually becoming more commercialised and more capital was available to invest in estate improvement (see Chapters 8 and 9), the economy had not developed sufficiently to take the sudden leap forward which the widespread adoption of the legislation of 1695 would have implied.

This provokes the question: why were the acts passed? There is not enough information concerning the detailed procedure of even the late seventeenth-century Scottish Parliaments to answer such a question with any certainty. It is not known who instigated the division of runrig and commonalty acts, or why they did so. The Parliament of 1695 included, among the nobility and the shire commissioners, several landowners who are known to have been connected with agricultural improvement. Lord Belhaven was, in four years or so, to produce his well-known treatise on

agricultural improvement (89) and was possibly at this time engaged in the enclosure of his estate at Biel in East Lothian (90). The Earl of Galloway (91) and Sir Andrew Agnew of Lochnaw (92) were concerned with the cattle-droving trade. The Earl of Findlater was one of the larger east-coast landowners involved in the grain trade (93). Lord Bargany (94), the Earl of Leven (95), and Sir John Clerk of Penicuik (96) all possessed estates on which new agricultural techniques had been introduced. William Cunningham of Craigends, one of the shire commissioners for Renfrew, had already enclosed a part of his estate and was encouraging his tenants to take long leases (97).

Further work on private estate papers would doubtless add substantially to this list, but it serves to show that a number of men with advanced ideas sat in the 1695 Parliament. No matter who was actually responsible for drafting the runrig and commonty acts, a substantial number of landowners must have appreciated their long-term value. With such men, and probably many others, in the Parliament, the climate of opinion may have been uniquely favourable for the passage of legislation for agricultural improvement.

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- 89. Lord Belhaven *The Countrey-Man's Rudiments or an Advice to the Farmers of East Lothian how to Labour and Improve their Ground* (1699)
 - 90. S.R.O. Hay of Belton muniments GD 73 1/31 (1703)
 - 91. Smout T.C. *Scottish Trade on the Eve of the Union 1660-1707* (1963) p.272
 - 92. S.R.O. Agnew of Lochnaw muniments GD 154 382 (1691)
 - 93. *The Seafield Correspondence 1685-1708* ed. Grant James S.H.S. (1912) p.188 (1696)
 - 94. S.R.O. Bargany muniments GD 109 3497 (1705)
 - 95. S.R.O. Leven muniments GD 26 5 522, 534
 - 96. S.R.O. Clerk of Penicuik muniments GD 18 708
 - 97. *Diary and General Expenditure Book of William Cunningham of Craigends* ed. Rev.J.Dodds S.H.S. (1887) pp.25-26

In more general terms, the agricultural legislation of 1695 may be viewed in the context of Scottish Parliamentary history. The relatively passive role of the Scottish Parliament throughout most of the seventeenth century has already been discussed. Only between the Claim of Rights in 1690, when the Scottish Parliament requested, and was largely granted, powers comparable with its English counterpart (98), and the Union of 1707, was there any indication that the Parliament acted as a free and independent legislative body (99). In this short-lived flowering, the attitude of the Scottish Parliament towards many aspects of policy was radical and dynamic (100). The 1695 agricultural legislation may have been another aspect of a new and energetic approach to legislation, and it is possible that out of sheer enthusiasm, those responsible for drafting the act may have lost sight of the immediate practicability of what they were advocating.

The seventeenth-century improving legislation finished with a second act in favour of the heritors adjacent to the Pow of Inchaffray (101). The previous legislation for clearing the stream to prevent flooding had been frustrated by the minority of some of the heritors and by the dissension of others. The stream channel was to be deepened and cleared as before but this time the marches of the heritors were to be straightened in accordance with the statute of 1669. The fact that compensation for any losses caused by draining and ditching was provided for, unlike the previous act, suggests that the drainage scheme which was being proposed

98. Dicey and Rait (1920) *op.cit.* p.62

99. *Ibid.* p.65

100. *Ibid.*

101. A.P.S. X (1696) p.67b

was on a grander scale than the earlier clearing of the channel, taking advantage of the improving legislation which had been passed in the intervening period.

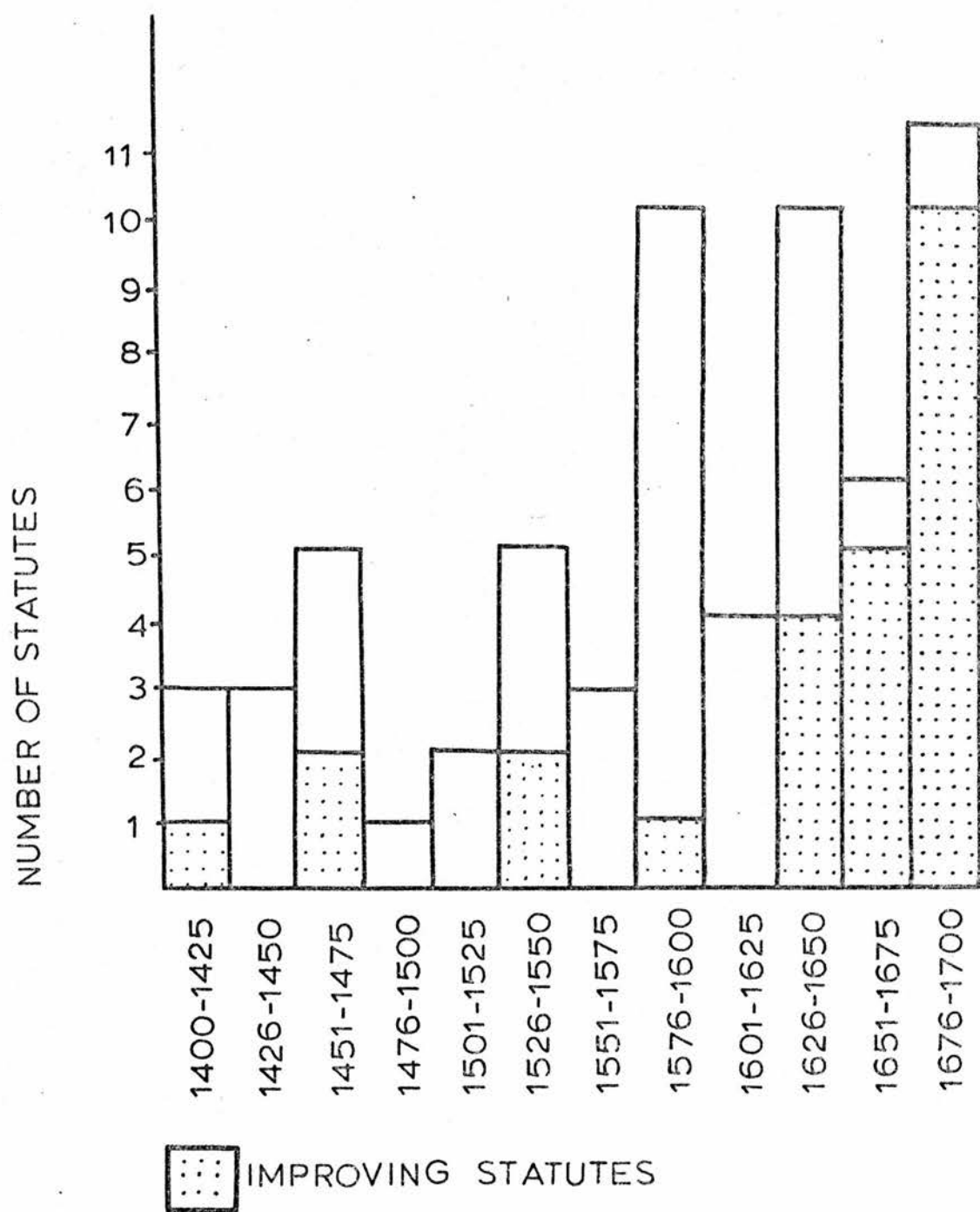
2.5 CONCLUSION

When the agricultural legislation which was passed by the Scottish Parliament is considered (Fig 2.1) it can be seen that there was a slow and irregular but quite definite increase in the number of acts relating to agriculture which were passed in each twenty-five year period from the early sixteenth century until the end of the seventeenth century.

When the occurrence of improving acts (defined as those which were concerned with encouraging enclosure, planting, consolidation, drainage and new crops) is considered, it can be seen that, apart from some sporadic but apparently ineffectual legislation in the fifteenth and sixteenth centuries, nothing happened until the second quarter of the seventeenth century. After this, the proportion of improving acts increased rapidly until in the latter half of the century they accounted for almost all the acts relating to agriculture which were passed. This is certainly indicative of a marked change in the attitude of the legislature towards agriculture and is a further indication of a definite policy of improvement starting on the eve of the Civil Wars and resuming after the Restoration.

The question remains: who was responsible for initiating this legislation? The personalities behind the statutes have left little trace but some general points can be suggested. The structure and wording of the acts themselves suggest that there was a small but powerful pressure group

FIG. 2.1 THE OCCURRENCE OF STATUTES
RELATING TO AGRICULTURE.



among the landowning element which was itself dominant in Parliament. Virtually all the improving acts were designed to encourage a small number of forward-looking men against the opposition or at least the apathy of the majority of their neighbours. The 1695 division of runrig and commonty acts gave power to any one heritor to force a division through in the face of the opposition of all the other heritors who were concerned. Earlier acts, such as the straightening of the marches act of 1669, were similarly designed to give a proprietor who desired to improve his estate as much scope as possible for forcing his unwilling neighbours to take a share in the work. Even the earliest improving act, the 1647 limited division of commonty act, made provision in a more restricted way for opposition. The extent of the opposition to this particular statute can be gauged in part by the list of landowners who succeeded in having themselves specifically excluded from it.

This suggests that the men who were responsible for these statutes were not anticipating the immediate adoption of the legislation by a majority or even a large number of landowners. They appear to have been specifically designed to aid a small group of enthusiastic and far-sighted proprietors who were struggling to make headway against considerable opposition. The only possible exceptions to this are the 1695 runrig and commonty acts in which, as has been suggested above, the legislature may have over-reached itself by promoting statutes which were inappropriate in the contemporary economic setting. The examples which have been quoted above citing specific instances where the improving legislation was definitely taken up and acted upon are few in number, but as has been explained, one of the most likely sources of

further evidence, the sheriff court records, has yet to be examined. A good deal of the evidence for agrarian change which will be considered in later chapters may have taken place as a direct result of the legislation although the link cannot be demonstrated directly.

The general impression is that the legislation was not being passed by an isolated group of theorists who were out of touch with the requirements of contemporary agrarian society. It appears instead, that the statutes were passed by experienced and practical men who were aware of the difficulties which were likely to be encountered by those who attempted to improve their estates. That the legislation fulfilled a definite need on the part of at least some landowners is shown by the evidence that the acts were put into practice. In particular, the efforts which were made to lower the cost of enclosure for any proprietor by spreading the cost over his neighbours where possible, and by granting tax relief upon enclosed land, suggest that lack of capital was a major stumbling block to improvement.

The above arguments provide an answer to the problem of why the legislation was not adopted immediately on a large scale. Viewed in these terms, the legislation was not intended to produce overnight a sweeping transformation of the Scottish agrarian economy, but only to encourage improvement on a fairly limited front by a few landowners who had the necessary enthusiasm and capital. Succeeding chapters will consider the wider evidence for the spread of agricultural improvements such as enclosure, planting and consolidation. In most cases, the nature of the evidence is such that the improvements cannot be related directly to the improving legislation which was being passed by Parliament at

about the same time. However, the fact that these two trends were continuing simultaneously suggests that there must have been a close relationship between them, although this can only be demonstrated in the few instances referred to above. It is difficult to say which influenced the other; whether the landowners who were already enclosing some of their land set up a pressure group in Parliament to pass legislation which favoured their activities, or whether the passage of the legislation acted as a spur to improvement. It is probably unrealistic to try to separate them and there is more likely to have been a close interaction between the two. If this was the case, then it would appear that the late seventeenth-century improving legislation was successful in the fairly limited way in which it appears to have been intended.

PART II

CHANGES IN AGRICULTURAL PRACTICES

CHAPTER III

THE MAINTENANCE OF SOIL FERTILITY

3.1 INTRODUCTION

The maintenance of soil fertility has always been the central problem around which the practices of arable farming have been organised. It can be divided into two principal components: the application of fertilizers which increase soil fertility directly, and the development of crop rotations which take less out of the soil or actually contribute to its fertility. The degree of sophistication of these techniques is a major influence in determining the levels of crop yields.

Some innovations in the use of fertilizers can be demonstrated in seventeenth-century Lowland Scotland. Unfortunately, the information at present available is insufficient to allow the origins of the use of some fertilizers and crop rotations to be definitely placed in this period. They were in existence at this time but could have been in use at an earlier date. However, the links between these practices and known innovations, as well as the increasing commercialisation of arable farming which is shown by the expansion of markets and trading (see Chapter 9), suggest that these techniques, if not actually introduced at this period, must at least have undergone a considerable expansion. Accordingly, although their status as innovations may as yet only be surmised and not definitely proved, it has been thought valid to consider them here, within the study of agrarian change.

Some attention will be given initially to traditional techniques of arable farming. Improved fertilizers will then be reviewed. This leads naturally to a consideration of the crops which were grown and the rotations which were used. Finally, the effects of all these techniques upon crop yields, the end product of all arable farming activities, will be assessed.

3.2 TRADITIONAL METHODS OF MAINTAINING SOIL FERTILITY

The traditional method of maintaining the fertility of arable land throughout Lowland Scotland was by the use of animal manure, either alone or mixed with other substances. It is only proposed to summarise the actual practices which were involved. They have been described in detail for the early eighteenth century by Handley and other writers (1). All the evidence available suggests that the same basic systems were in operation throughout the seventeenth century.

The maintenance of soil fertility in an infield-outfield system depended upon the existence of an adequate balance between arable land and livestock. Infields were manured with the dung produced by the animals during their period of winter housing. One division of the infield, traditionally the one which was being prepared for bere, was manured in this way each spring. The manure was made to go further by mixing it into a compost with other material. Straw litter from byres and stables, old

1. Handley J.E. *Scottish Farming in the Eighteenth Century* (1953) pp.37ff

Hamilton H. *An Economic History of Scotland in the Eighteenth Century* (1963) pp.37ff

thatching, ashes or turves from the commony might be used. Infields also received the benefit of direct manuring by the animals when they were turned onto the stubble after harvest (2). Handley claims that the advantages of this may have been nullified by the damage caused to the land by the hooves of the livestock (3).

The outfields were generally fertilized by manure alone, without the addition of other substances. Livestock were folded by night during the summer on the part of the outfield which was being prepared for cultivation. The land received no further manuring save during the grazing of the stubble after harvest (4).

The livestock thus contributed directly to the continued wellbeing of the arable land. In return, the animals were maintained during the winter on the straw from the cropped land, and they also received some nourishment from the stubble. Crops and animals were thus closely interdependent, as is shown in Fig 3.1. There were other inputs into this semi-closed system, however. Turf, ashes and other rubbish contributed to the fertility of the infield, while the livestock were able to graze on the commony in summer and had the natural hay cut from the meadows to eke out their food supplies in winter.

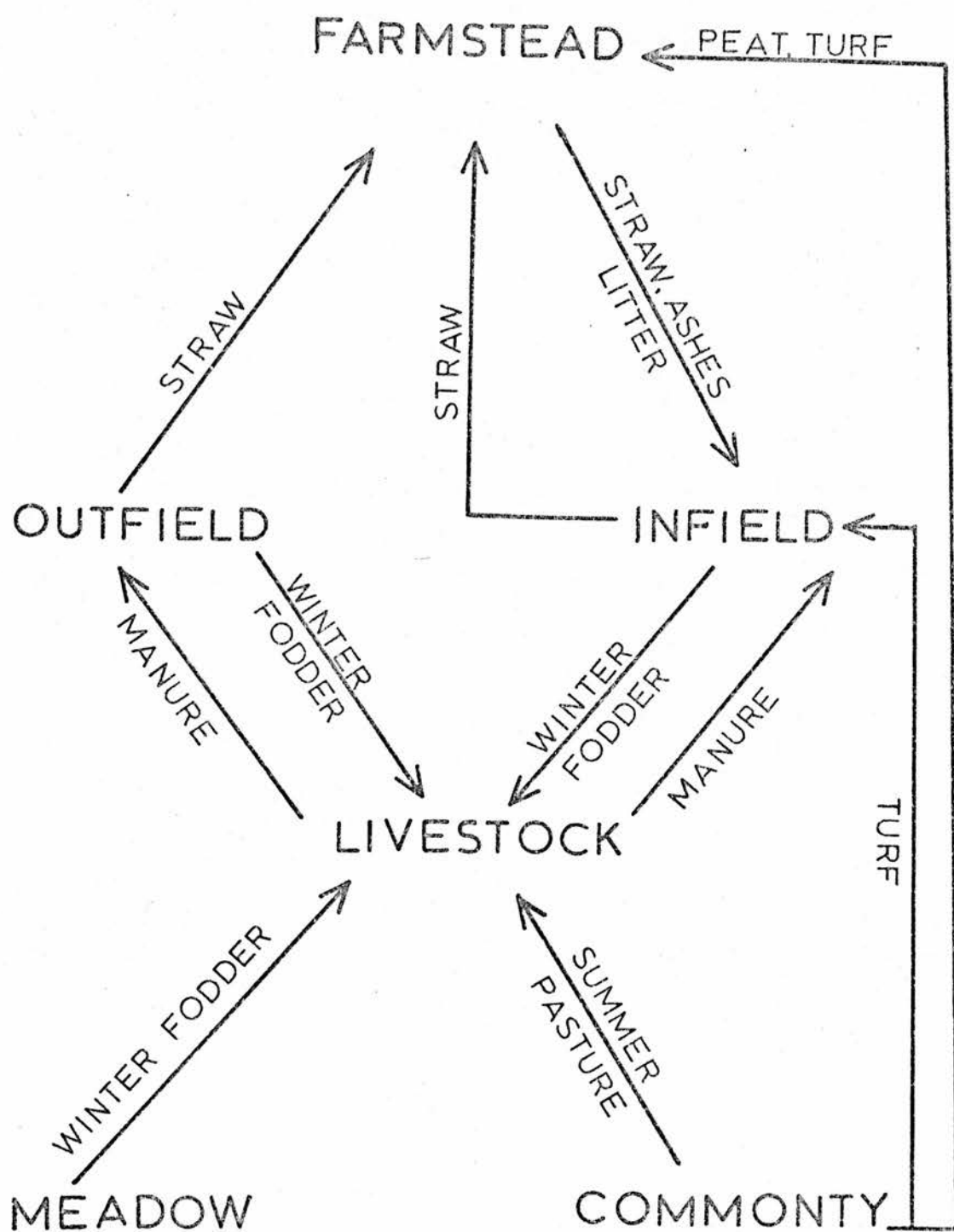
Despite this, it is clear that the system was not a very flexible one. If the balance between the cropped area and the number of livestock was disturbed in any way, the system would be in danger of failing. An increase in the proportion of the area under crop would, after a point, cease to be worthwhile. There would be a limit to the number of livestock

2. Handley J.E. (1953) op.cit. p.60

3. Ibid. p.70

4. Ibid. p.42

FIG. 3.1 THE TRADITIONAL SYSTEM OF MAINTAINING SOIL FERTILITY.



which could be maintained on the farm and the possible gain in winter fodder would be offset by the manure being more thinly spread. An increase in the number of livestock would produce more manure up to a certain level, but beyond that, limits to the provision of winter fodder would cause a decline in the quality of the animals.

Thus, increases in crop production beyond a certain level would have been difficult if this basic system was adhered to. This would have restricted regional specialisation, and would have resulted in the predominance of mixed farming. Even the addition of turves to the infield compost was detrimental to the farm in the long run, as it promoted soil erosion and a decline in the quality of the pasture on the common. To increase arable production significantly, inputs of fertilizers from outside the system were necessary. These would have allowed an increase in crop production without affecting the balance of livestock to pasture and thereby endangering the system. Several alternatives were available in parts of Lowland Scotland in the seventeenth century. However, not all areas were located so as to be able to make use of them. The introduction of some of these alternative fertilizers, particularly lime, was one of the most significant changes in seventeenth-century arable farming. They may, as will be suggested later, have allowed fairly continuous high yields to be achieved for the first time in the history of Scottish agriculture, especially when used in conjunction with improved crop rotations, as will be considered below.

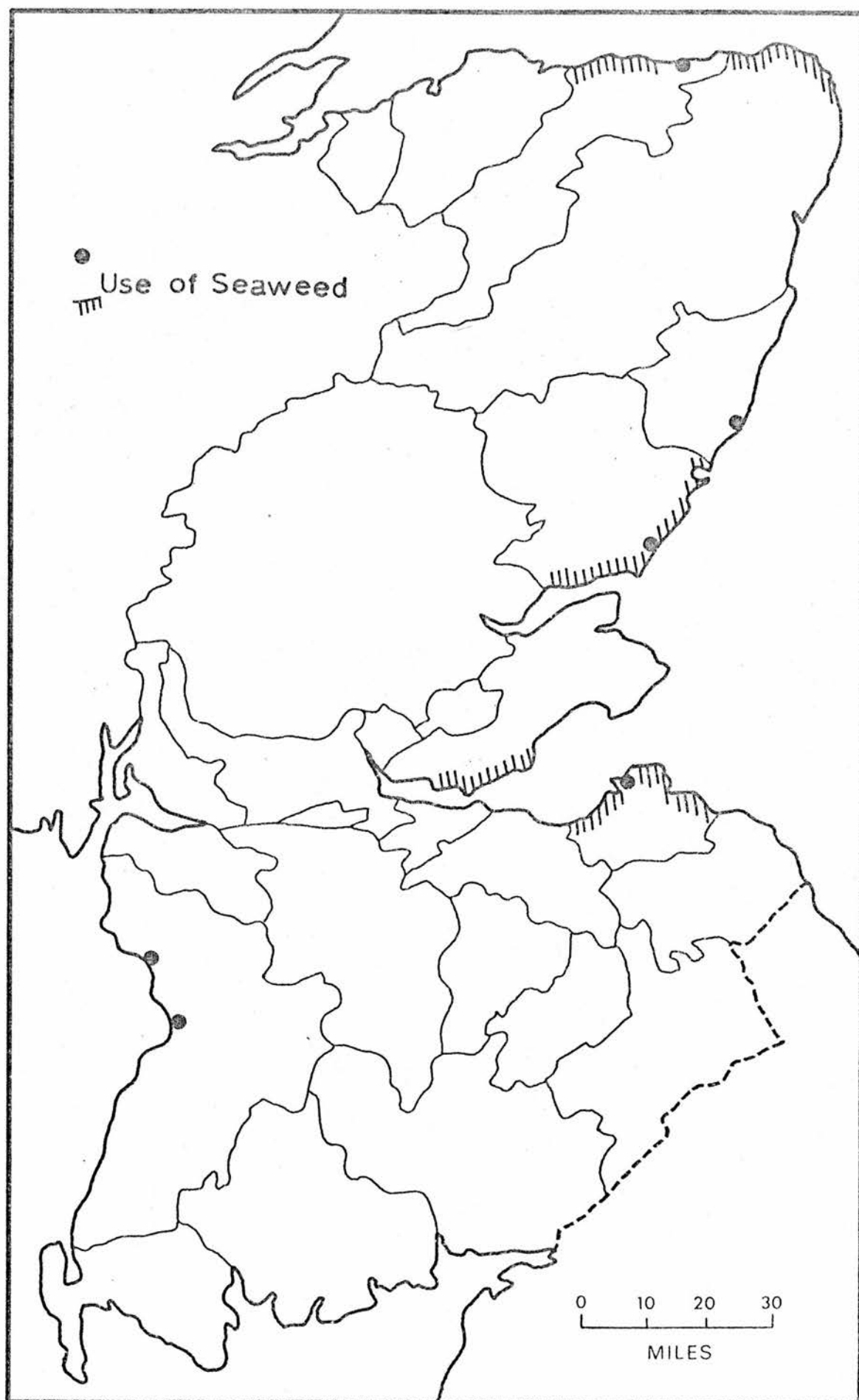
3.3 ALTERNATIVE FERTILIZERS

Seaweed

Coastal areas of Lowland Scotland made great use of seaweed as a fertilizer in the seventeenth century. Map 3.1 shows the areas where it is known to have been used. Its value as a fertilizer is indicated by its inclusion as a part and pertinent of coastal estates in charters (5), and by the specific granting of tacks giving rights to its use (6). In later times, access to seaweed had the effect of raising the rents of coastal lands (7), and this may also have been the case in the seventeenth century. Gordon of Straloch described seaweed gathering on the Banffshire coast: "at the ebb tide they drag the fugitive seaweed back, plunging into the sea in the tempestuous winter, even by night" (8). This demonstrates the efforts which were made to obtain it. The use of seaweed was probably confined to a very narrow coastal strip. Belhaven did not consider that it was worth transporting it more than about two miles inland (9). This probably stemmed from the fact that seaweed was required in considerable quantities for best effect. Gordon of Troup considered that 400 loads (whether cart or horse-loads is uncertain) were *creels*

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5. S.R.O. Yester muniments GD 28 293 (1669)
 6. S.R.O. Scott of Benholm muniments GD 4 154 (1629)
 7. Kerr R. General View of the Agriculture of the County of Berwick (1809) p.377
 8. Sir Robert Gordon of Straloch Account of Aberdeenshire and Banffshire (1662) in Macfarlane's Geographical Collections S.H.S. (1908) II p.275
 9. John Hamilton, Lord Belhaven The Countrey Man's Rudiments, or an Advice to the Farmers of East Lothian How to Labour and Improve Their Ground (1699) p.34

MAP 3-1 KNOWN INSTANCES OF THE USE OF SEAWEED.



necessary per acre (10). The effects of seaweed were not supposed to last for long, and this quantity might have had to be repeated every two or three crops (11).

Brereton readily distinguished crops on land manured by seaweed by their luxuriance from those on land which had been merely dunged, in his tour of Scotland in 1636 (12). Fenton has suggested that the fertility of East Lothian, particularly its high levels of production of bere and wheat, was partly attributable to its use (13). Seventeenth-century writers agreed that seaweed was most beneficial for bere (14). Mackenzie even suggested that seaweed did little to promote the growth of oats (15). At places such as Gullane in East Lothian and Benholm in Kincardine, seaweed was applied to light sandy soils in preparation for bere (16). Modern research has shown that one of the main plant nutrients provided by seaweed is potassium. Sandy soils tend to be especially deficient in potassium and it has been shown that barley sown in such situations benefits greatly from fertilizers containing it (17). This connection between bere, sandy soils and the use of seaweed appears to

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10. Alexander Gordon of Troup *An Account of the North Side of the Coast of Buchan* (1663) in *Macfarlane's Geographical Collections* ed. Mitchell A. S.H.S. (1907) II p.133
 11. Kerr R. (1809) *op.cit.* p.377
 12. Sir William Brereton *Tour in Scotland* (1636) in Brown P.H. *Early Travellers in Scotland* (1891) p.154
 13. Fenton A. *The Rural Economy of East Lothian in the Seventeenth and Eighteenth Centuries* *Trans. East Loth. Antiq. and Field Nat. Soc.* IX (1963) p.1
 14. Gordon of Group (1663) *op.cit.* p.106
Belhaven (1699) *op.cit.* p.34
 15. Sir George Mackenzie *Some Observations made in Scotland* (1675) in *Macfarlane's Geographical Collections* ed. Mitchell A. S.H.S. (1908) III p.21
 16. S.R.O. Biel muniments GD 6 1689 (1676)
 17. Smith A.H. *Manures and Fertilizers* (1952) pp.77-78, 177-178

have been appreciated, if not understood, by seventeenth-century farmers. It led to distinctive rotations in sandy coastal areas. At Gullane, rentals imply that a rotation of bere/bere/oats/oats was in use (18). At North Berwick, a rotation of bere/bere/oats may have been operated (19). However, seaweed was also applied to clay soils in Buchan (20).

Little can be said with regard to the yields which seaweed produced. However, Mackenzie wrote that lands which were regularly manured with seaweed could give yields of up to 16 to 1 (21). This may have been an exaggeration, but it demonstrates how highly seaweed was regarded as a fertilizer.

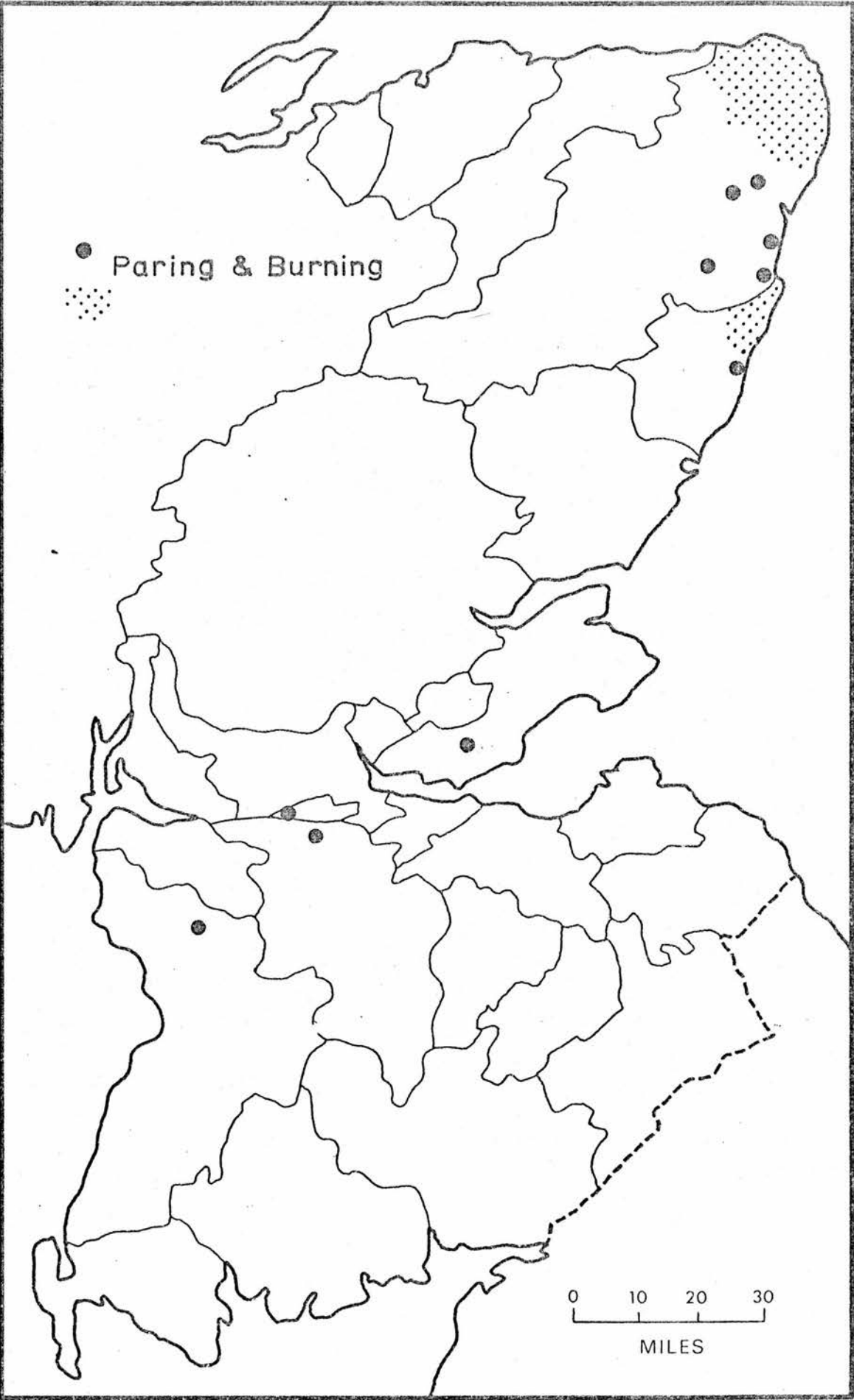
Paring and burning

Paring and burning provided a means of cultivating the surfaces of lowland peat mosses. This technique may be considered as lying outwith the traditional system because it involved the cultivation of ground which could not have been made to produce crops by any other means. It appears to have been most common in the North East, as is evident from Map 3.2, although a few examples did occur in the Central Lowlands.

Paring and burning should not be confused with muirburn, the burning of the surface vegetation on hill pasture to improve the quality of the grazing. Seventeenth-century documents usually distinguish clearly between the burning of "muirs" and "mosses". The former were hill

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- 18. S.R.O. Biel muniments GD 6 1689 (1676)
 - 19. S.R.O. Dalrymple muniments GD 110 674 (1952)
 - 20. Gordon of Troup (1663) op.cit. p.106
 - 21. Sir George Mackenzie (1675) op.cit. p.21

MAP 3-2 KNOWN OCCURRENCE OF PARING AND BURNING



pastures with a shallow layer of peat, the latter were basins with a considerable depth of peat, whether lying in a lowland situation or on upland plateaus.

The practice, as reconstructed from scattered references, appears to have been fairly straightforward. The moss was first ditched, to lower the water-table and allow the surface layers of the peat to dry out. It was then either cross-ploughed or dug by spade, and the surface peat thrown into heaps. When these were dry, they were burnt and the ashes evenly scattered (22). The crops were sown in the ashes. Donaldson describes a technique of burning during the autumn in preparation for the sowing of winter wheat (23), but presumably where oats and bere were cultivated, the burning was carried out in the spring.

This technique resulted in very high yields. Lady Anne Drummond considered that 16 or 20 to 1 was possible (24), and Donaldson, perhaps more cautious, thought 10 or 12 to 1 reasonable (25). That these claims were not exaggerated is suggested by later writers (26).

Land which was cultivated in this way appears to have stood outside the conventional infield-outfield framework, and was referred to as "burntland" (27). A tack on the Haddo estates refers to it as outfield,

22. Gordon of Straloch (1622) *op.cit.* p.268

23. Donaldson J. *Husbandry Anatomised, or an Enquiry Into the Present Manner of Teilling and Manuring the Ground in Scotland* (1697) p.23

24. Lady Anne Drummond *An Account of Buchan and What is Remarkable Therein* (1680) in *Collections for a History of the Shires of Aberdeen and Banff* Spalding Club (1843) p.95

25. Donaldson J. (1697) *op.cit.* p.23

26. Kerr R. (1809) *op.cit.* p.364

27. Keyth J. *A Note of Some Remarkable Things Within the Sherrifdom of the Mearns* (1642) in *Macfarlane's Geographical Collections* ed. Mitchell A. S.H.S. (1908) III p.238

yet implies that it could be cropped continuously (28). Donaldson describes the sowing of wheat, an infield crop, on it (29). The continuous cropping and sustained high yields were the result of the utilisation of the nutrients of a different layer of peat each time the moss was burnt.

The process could not be considered indefinitely. Eventually the moss would become burnt out and the old soil horizon beneath the peat would become exposed (30). However, the substratum was often capable of being cultivated, and was probably converted into arable in many cases (31). Indeed, where there was only a thin layer of peat overlying a potentially fertile substratum, Donaldson recommended paring and burning as a means of reclaiming the buried soil (32). He considered the temporary benefits of the crops raised in the course of the paring and burning as almost incidental.

By this means, a considerable amount of land in the north eastern Lowlands was reclaimed. John Keyth, writing in 1642, described the Cowie Mounth, the coastal route between Stonehaven and Aberdeen, as having been "dangerous in former times .. by reason of robbers" (33). This implies that it had been a barren and unfrequented area. Now, however, it was "for the most part manured and made fertile by burnt land, both in bere and oats" (34). This indicates that a considerable area had been turned into arable by this practice. Paring and burning may

28. S.R.O. Haddo muniments GD 33 30/49 (1668)

29. Donaldson J. (1697) op.cit. p.23

30. Fenton A. Paring and Burning and the Cutting of Turf and Peat in Scotland in *The Spade in Northern and Atlantic Europe* ed. Gailey A. and Fenton A. (1970) p.160

31. Fenton A. (1970) op.cit. p.162

32. Donaldson J. (1697) op.cit. p.23

33. Keyth J. (1642) op.cit. p.238

34. Ibid.

have been the counterpart of liming in this area for bringing more land under the plough.

Paring and burning should not be viewed as a primitive technique. It was a carefully regulated high-yield system of cropping whose value did not cease when the last of the peat had been burnt off. Some of the later Improvers regarded it as a pernicious system (35), but most of them recognised its value in reclaiming soils which could not have been brought into cultivation by any other method (36). The major drawback which limited its use in the seventeenth century was not connected with its effects upon soil fertility. Paring and burning was in direct competition with other demands on the same resource, peat. The most vital of these was the use of peat as a fuel. It is ironic that the North-Eastern Lowlands, the area which stood to gain most from this technique, was also the area which was most heavily dependent upon peat. The gentry in many areas of the Central Lowlands had long since begun to use coal in their houses (37), and there are indications that coal was beginning to become available to the wealthier tenants in some areas by the end of the seventeenth century (38) see Chapter 4). However, coal was generally too expensive to import into the North East. As a result, paring and burning was strictly controlled on many estates in this area to conserve fuel supplies, with acts against the burning of mosses being passed in baron courts (39), or clauses inserted in tenants' tacks (40).

35. Fullarton Col. General View of the Agriculture of the County of Ayr (1793) p.47

36. Sinclair, Sir John General Report on the Agricultural State and Political Circumstances of Scotland (1814) II p.403

37. Eg. S.R.O. Kinross muniments GD 29 204 (1697) and 228 (1684)

38. S.R.O. Boyd of Kilmarnock muniments GD 8 954 (1707)

Town refuse

High yields could also be maintained on land adjacent to towns and villages by the continued application of nightsoil, ashes, stable litter and other waste products. Little information is available regarding this. However, there are some indications that intensive cultivation by means of such fertilizers may have been widespread in the immediate neighbourhood of the larger and smaller burghs. A tack of a holding in Torry, now a suburb of Aberdeen, granted the right to the "muck" from some nearby tenements belonging to the proprietor (41). The beneficial effects of this were indicated by the unusually high rent of four bolls of grain per acre which was charged for the holding. This suggests an approximate average yield of about 12 to 1 by the method described below. Another smallholding near Aberdeen which had a high rent was probably supplied with similar fertilizers (42).

A reference to Cramond, near Edinburgh, mentions Sir James Mackgill as having used ten horses daily, in the 1630s, for bringing town refuse from Edinburgh, four miles away (43). There are also indications of this practice in the vicinity of smaller burghs such as Alloa (44), North Berwick (45), Stonehaven (46) and Elgin (47). Belhaven states

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- 39. Court Book of the Barony of Leys (1649) Spalding Club Miscellany V (1852) p.229
 - 40. S.R.O. Dalhousie muniments GD 45 20 69 (1703)
 - 41. S.R.O. Menzies of Pitfodels muniments GD 237 232 (1660)
 - 42. S.R.O. Ross of Arnage muniments GD 186 5 (1694)
 - 43. Law J. The Antient and Modern State of the Parish of Cramond (1794) p.97
 - 44. S.R.O. Mar and Kellie muniments GD 224 467 (1674)
 - 45. S.R.O. Dalrymple muniments GD 110 674 (1652)
 - 46. S.R.O. Keith Marischal muniments GD 54 1/217 (1695)
 - 47. The Records of Elgin 1234-1800 ed. Cramond W. New Spalding Club (1903) p.182 (1647)

that even villages could supply enough refuse to allow some small-holdings to benefit (48). His assertion that town refuse could be carried with profit up to about three miles agrees broadly with the evidence for Cramond (49).

Marling

Of all the new fertilizers, marl appears to have made least headway in Scotland during the seventeenth century. The reasons for this are not clear. It is possible that a knowledge of the availability of marl and its improving effects upon soil structure were not as widely known as the benefits of liming. Lime may have been more popular as smaller quantities were required to achieve a given effect, and results were more immediate (50). The large quantities of marl which were needed may have proved more than the transport technology of the day was capable of handling. However, it is possible that liming has received more attention in the source material because it required the provision of a kiln and a fuel supply for its preparation. Certainly, the first recorded instance of the use of marl was as early as 1627, in Saltoun parish, East Lothian (51). The importance of marl as a fertilizer was sufficient for the localities where it occurred to be described in an account of Tweeddale dating from the reign of Charles II (52). The use

48. Belhaven (1699) op.cit. p.5

49. Ibid.

50. Dodgshon R.A. Agricultural Change in Roxburgh and Berwickshire 1700-1815 Unpublished Ph.D. thesis, University of Liverpool (1969) pp.238-240

51. Reports on the State of Certain Parishes in Scotland, 1627
Maitland Club (1835) p.133

52. Macfarlane's Geographical Collections S.H.S. (1908) III p.142

of marl was known to Sibbald (53), Donaldson (54), and Belhaven (55), the three principal late seventeenth-century writers on agricultural improvement, although Belhaven described it as one of the innovations with which he was not going to "affright" his readers. This suggests that marling may not have been too familiar and its impact appears to have been insignificant in comparison with that of lime.

Liming

The most important innovation in the maintenance of soil fertility which occurred in seventeenth-century Lowland Scotland was undoubtedly the introduction of liming. Some writers have assumed that liming was an eighteenth-century development in Scotland. Graham, for instance, considered that liming was hardly used before about 1730 (56). More recently, Smout and Fenton have pointed out that liming was practised in parts of the Lothians as early as the 1620s (57). The study of estate papers has confirmed this and has extended the area over which liming is known to have been practised at this time. Map 3.3 shows the distribution of workable limestones in Lowland Scotland. It is clear that large areas of the Central Lowlands were in a position to adopt liming. Outside these areas, Lowland Scotland was poorly endowed, apart from isolated areas such as Strath Isla in Banffshire. The known

53. Sir Robert Sibbald *Discourse Anent the Improvements May be Made in Scotland for Advancing the Wealth of the Kingdom* (1698) c.7

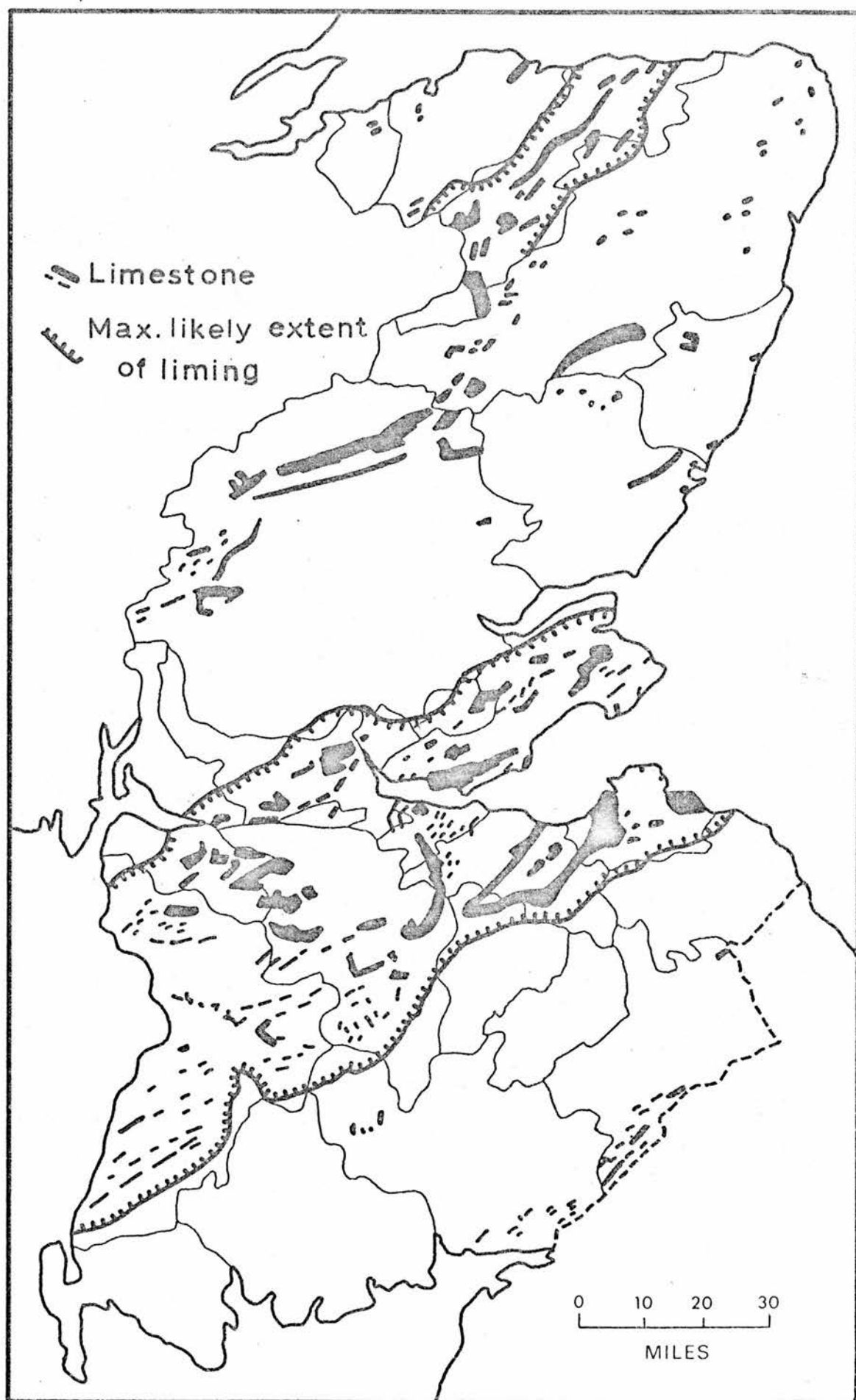
54. Donaldson J. (1697) *op.cit.* p.19

55. Belhaven (1699) *op.cit.* p.4

56. Graham H.G. *The Social Life of Scotland in the Eighteenth Century* (1937) p.154

57. Smout T.C. and Fenton A. *Scottish Agriculture Before the Improvers - An Exploration* Ag.H.R. XIII (1965) p.82

MAP 3.3 WORKABLE LIMESTONES



occurrences of liming in the seventeenth century are shown on Map 3.4. The maximum likely extent of liming for the Central Lowlands and Banffshire has been delimited by defining a zone within five miles of a potential source of limestone. Five miles, as will be shown below, appears to have been the maximum distance over which it was practicable to transport lime overland in sufficient quantity for agricultural purposes. The actual distribution of liming in these areas is likely to have been more limited than this. Some of the land within the areas lies at high altitude and would have lain beyond the margin of cultivation. In addition, there is no reason to believe that every existing source of limestone was either known or worked.

Smout and Fenton found no evidence for liming north of the Forth (58), but estate papers indicate that it was important in Fife as early as in the Lothians (59). The Banffshire limestones were being worked and burnt for agricultural use by 1674 (60).

The date of this innovation is difficult to determine. Recent excavations on Iona have suggested that liming may have been practised in Scotland during the seventh and eighth centuries A.D. (61). Whether it continued in use during the Middle Ages on monastic estates is a matter for speculation. There is, as yet, no manuscript evidence for the existence of liming prior to the early years of the seventeenth century.

No matter what the origins of liming in Scotland may have been, it

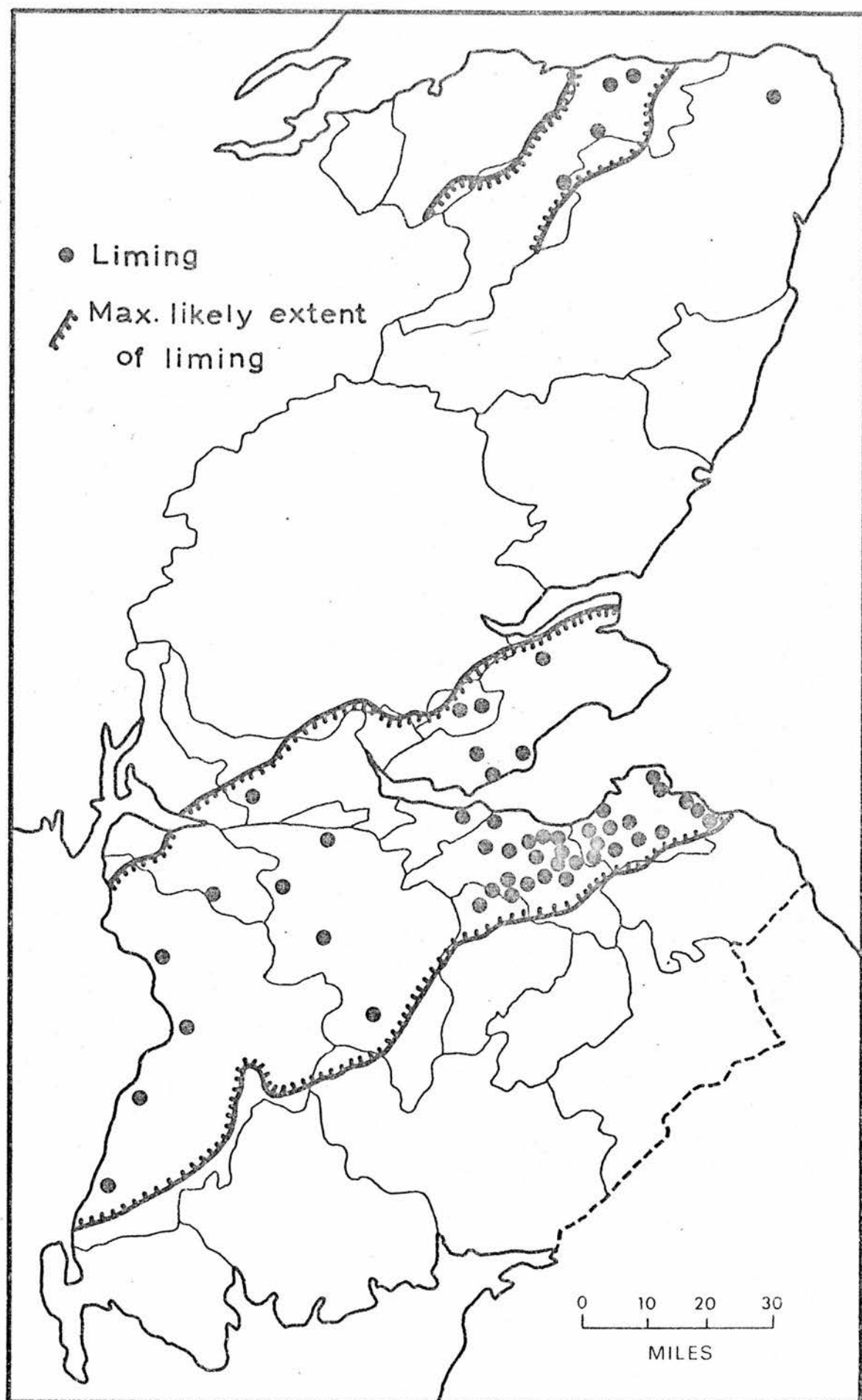
58. Smout T.C. and Fenton A. (1965) *op.cit.* p.82

59. Eg. S.R.O. Leven muniments GD 26 5 6 (1626)
NL. MS. Minto muniments CB 144 (1633)

60. Gordon of Straloch (1662) *op.cit.* p.270

61. Reece R. Recent Work at Iona Paper presented at Scottish
Archaeological Forum 3rd March 1973

MAP 3.4 KNOWN OCCURRENCE OF LIMING



is clear that it underwent a considerable expansion in the 1610s and 1620s. It is fortunate that a series of parish descriptions for a large part of Midlothian and adjacent parts of East Lothian are available for 1627. These were produced by the ministers of the parishes as part of a national survey, but this was the only area for which a large number of detailed returns have survived.

The descriptions make it clear that by 1627, liming had been in use for several years (62). The dangers of ruining a soil by over-liming were already appreciated (63). Liming had become so essential that farms which had no limestone outcrops had already made arrangements to purchase and transport lime from the nearest source (64). The reports give several examples of farms which brought their lime from up to four or five miles away (65). The proprietors and tenants of such farms were concerned that, in the event of relations with the producers of the lime deteriorating, supplies might cease (66).

That liming had been a fairly recent introduction in this area is shown by the fact that prospecting for limestone was still in progress (67), that some farms on which limestone had been discovered had not yet begun to exploit it (68), and that some farms had begun liming within the last two years (69). Nevertheless, the first wave of liming had already resulted in a rapid expansion of the arable area in some places and a consequent rise in rents (70).

62. Reports of 1627 *op.cit.* p.40

63. *Ibid.* pp.125, 128

64. *Ibid.* p.40

65. *Ibid.*

66. *Ibid.* p.126

67. *Ibid.* p.40

68. *Ibid.* p.41

The earliest references to liming in other areas occur at about the same time. On the Leven estates at Raith, in Fife, the earliest reference is in 1612 (71). At Aberdour, in Fife, the first mention of liming is in a tack dated 1625, although earlier tacks are extant without such references (72). The first recorded use of lime at Ruchsoles in North Lanarkshire was in 1627 (73), and at Duntreath, north of Glasgow, in the same year (74). Liming had already been practised for some years in Cramond parish, near Edinburgh, by 1630 (75).

The impression gained from this is that the use of lime spread quite rapidly in the vicinity of the Carboniferous Limestone outcrops of the Central Lowlands during the early decades of the seventeenth century. Thereafter, liming became a standard practice on many estates. By 1628, Lowther, travelling through the Borders, the Lothians and Fife, could remark: "their tillage (is) like ours (in England): they use much liming of their ground" (76), as though liming was common over large areas of the Eastern Lowlands.

The spread of the practice beyond the immediate vicinity of suitable outcrops was prevented by the difficulty and expense of transporting lime in bulk. Smout and Fenton have suggested that the availability of coal for burning the lime may have been an important influence in restricting the spread of liming (77). Coal was certainly the normal fuel

69. Reports of 1627 op.cit. p.42

70. Ibid.

71. S.R.O. Leven muniments GD 26 2 2 (1612)

72. S.R.O. Morton muniments GD 150 2012 (1625)

73. S.R.O. Ruchsoles muniments GD 237 104/4 (1627)

74. S.R.O. Duntreath muniments GD 97 387 (1627)

75. Law J. (1794) op.cit. p.96

76. Lowther C. Our Journal into Scotland (1629) p.35

77. Smout T.C. and Fenton A. (1965) op.cit. p.83

for burning lime derived from Carboniferous limestones, but lime was burnt by means of peat in Banffshire (78), and on the Solway coast (79). The 1627 Reports suggest that it was not an economic proposition, given the contemporary state of the roads and transport, to carry lime more than about four or five miles overland.

Lime was required throughout Lowland Scotland for construction purposes. It was shipped from coastal limeworks in the Firth of Forth to the North Eastern Lowlands (80), and carried by pack-horse into the remote Border dales (81). However, its use was mainly confined to the houses of the gentry. Even the wealthier tenants appear to have used lime for building only in areas which were situated close to limestone outcrops (82). As relatively small quantities were required for construction compared with agriculture, it was practicable to transport it over these distances. However, the large quantities which were required for agricultural use (up to six tons per acre were used as an initial dressing) (83), presented a much greater transport problem. It was not until the late eighteenth century that communications improved sufficiently for farmers outside the immediate vicinity of limestone outcrops to be able to use lime for agricultural purposes (84).

The effects of liming appear to have been twofold. Firstly, it allowed

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- 78. Macfarlane's Geographical Collections ed. Mitchell A. S.H.S. (1906) I p.82
 - 79. Symson A. A Large Description of Galloway (1684) in Macfarlane's Geographical Collections ed. Mitchell A. (1907) II p.79
 - 80. The Book of the Thaness of Cawdor Spalding Club (1859) p.328 (1673)
 - 81. S.R.O. Buccleuch muniments GD 224 943 3 (1652)
 - 82. S.R.O. Penicuik muniments GD 18 722 (1694)
 - 83. Gardner H.W. and Garner H.V. The Use of Lime in British Agriculture (1953) p.15
 - 84. Dodgshon R.A. (1969) op.cit. p.241

the intensification of cropping on the existing arable area and generally improved crop yields. Secondly, it allowed land to be brought into cultivation which could not have been reclaimed by the use of traditional fertilizers.

Liming appears to have increased crop production on both infields and outfields, depending upon the practice of particular estates. Belhaven did not recommend the liming of infields (85) but Skene of Hallyards favoured it (86). Infields were definitely limed on the Dundas estates at South Queensferry (87), on the Leven estates around Raith (88), and at Borthwick in Midlothian (89). Skene of Hallyards recommended the application of lime before sowing peas (90). This was highly significant. Peas were at best an uncertain crop, as will be discussed presently, but they benefited greatly from a lime-enriched soil. The improvement of the legume course by liming would have contributed to an increase in soil fertility through the nitrogen-fixing properties of the symbiotic bacteria in the legumes. This would have improved the yield of the succeeding crop, which was generally wheat or bere. The yields which could be obtained from a combination of liming and the use of legumes will be considered below.

On outfields, the principal result of liming appears to have been an increase in the number of successive crops of oats which could be taken before yields began to fall off to such a degree that the land had to be

85. Belhaven (1699) *op.cit.* p.17

86. Skene of Hallyards *Manuscript of Husbandrie* ed. Fenton A. Ag.H.R. XI (1963) p.67

87. S.R.O. Shairp muniments GD 30 612 (1655)

88. S.R.O. Leven muniments GD 26 5 6 (1626)

89. 1627 Reports *op.cit.* p.40

90. Skene of Hallyards *op.cit.* p.67

fallowed. Known examples of cropping systems on limed and unlimed outfields are shown in Table 3.1.

When the standard error of the difference of these examples was calculated, it was found to be significant at above the 0.1% level of probability. This indicates a distinct difference in the number of crops taken between each group. The table also shows that, in most examples, the ratio of crops to fallow was greatly changed by liming. Most of the unlimed outfields had crop/fallow ratios of 1 to 1, while the limed examples go as high as 3 to 1, indicating a more intensive rotation. The effect of this was to increase the percentage of outfield which was under crop in any year from 50% in most of the unlimed examples to as much as 66% in Belhaven's recommended rotation and 75% at Ruchsoles. This must have resulted in a significant increase in production, even leaving aside the possibility that the yields were increased by the liming.

The impact of liming upon the soils of Lowland Scotland, which tend to be deficient in calcium carbonate, must have been considerable. Unfortunately, there is no direct evidence of its effect upon crop yields. However, a study of liming under experimental conditions gives an indication of its possible effect. Table 3.2 is adapted from Gardner and Garner (91), and relates to an experiment carried out on very acid soils in Hertfordshire between 1934 and 1947.

It is clear from this table that the effects of liming were least for oats, a grain which was adapted to acid soils, and most impressive for barley and beans. Wheat and peas fell between the two extremes but

91. Gardner H.W. and Garner H.V. (1953) *op.cit.* pp.69-70

TABLE 3.1 CROPPING SYSTEMS ON LIMED AND UNLIMED OUTFIELDS

<u>Estate</u>	<u>County</u>	<u>No. of crops</u>	<u>No. of fallows</u>
LIMED OUTFIELDS			
Leven	Fife	5-6	4
Caldwell	Renfrew	4	3
Dundas	West Lothian	5	4
Lochgelly	Fife	4	?
Ruchsoles	Lanark	6	2
Kinross	Kinross	4	2
Lord Belhaven	-	7-8	4
Skene of Hallyards	-	3	?
UNLIMED OUTFIELDS			
Airlie	Angus	2	1
Caldwell	Renfrew	2-3	2-3
Panmure	Angus	3	?
Belhelvie	Aberdeen	3-4	?
Stichill	Roxburgh	4	?
Gordon	Aberdeen	3-4	?
Galloway	(Symson)	4	4
Haddo	Aberdeen	4	4
East Lothian	(Belhaven)	3-4	4
Northesk	Angus	4	?
Dalkeith	Midlothian	2	4-5
Troup	Aberdeen	4-5	?

were nevertheless improved significantly. The effects on bere were probably less than on barley, as bere was more tolerant of acid conditions (see below). It is reasonable to suppose that the effects of liming in seventeenth-century Lowland Scotland were similar in kind, though not necessarily in degree, depending upon the quantities of lime used and other arable practices. Improvements in crop yields must have been most marked on infields, especially where a four-course rotation involving wheat, bere, oats and legumes was used. It is possible, though there is no direct evidence, that the introduction of liming encouraged the spread of crops like wheat and peas which were less acid-tolerant than oats or bere.

TABLE 3.2 THE EFFECTS OF LIME ON ACID SOILS
IN HERTFORDSHIRE

Plot	A	B	C	D	E
x lime requirement	0	$\frac{1}{2}$	1	$1\frac{1}{2}$	2
Soil pH	4.3	4.7	5.3	5.8	6.5
Index of increase with A as unity					
Beans	1	5	8	13	12
Barley	1	2.3	6	9.6	10
Peas	1	2	3	3	5
Oats	1	2.5	3.3	3.3	3.1
Wheat	1	2.9	4.6	4.6	4.8

Frequent application of lime after the initial dressing was felt to be necessary. Many estates inserted penalty clauses in their tacks to ensure that a sufficient quantity of lime was applied regularly (92). However, the amount of lime which was used was strictly controlled to prevent the declines in fertility and the pollution of streams which could result from excesses.

The second major effect of liming was to allow new land to be brought into cultivation. It is probable that considerable areas of marginal land in the Central Lowlands were converted to arable by means of liming. However, detailed consideration of this expansion will be deferred until later (see Chapter 4).

By the end of the century, arable expansion by means of liming had achieved such results in the Central Lowlands that Sibbald was able to write: "In many places in the country ther was only a small parcell of ground laboured ... bot now for a good distance from the towns and villages ther is little to be seen but laboured ground". Sibbald attributed this expansion specifically to liming (93).

The effects of liming on rents, whether through increases in production due to higher yields, more frequent cropping of outfields, or an expansion of the arable area, were immediate and spectacular. The best evidence for this comes from the 1627 Reports, where increases in rents due to liming are given for farms in several parishes, as is shown in Table 3.3.

The percentage increases in rent vary from the substantial to the spectacular. It is noticeable that the more modest increases come from

92. S.R.O. Yester muniments GD 28 1428 (1634)

93. Sir Robert Sibbald (1698) *op.cit.* c.3

TABLE 3.3 INCREASES IN RENTS DUE TO LIMING,
FROM THE 1627 REPORTS

Parish	Farm	Rent before liming	Rent after liming	Percentage increase
MIDLOTHIAN				
Borthwick	E.Halkerstone	500mks.	600mks.	20
	W.Halkerstone	40mks.	200mks.	400
Cockpen	Dalhousie	13ch.grain	13ch.& £100	?
Cranston	Nether Cranston	6ch.grain	11ch.10 bolls	93
Temple	Esperton	600mks.	900mks.	50
	Yorkston	80mks.	550mks.	588
	Udderston	£10	50mks.	233
	Gladhouse	200mks.	400mks.	100
	Clerkington	10mks.per husbandland	80mks.per husbandland	700
EAST LoTHIAN				
Bothans	Newhall	200mks.	1,040mks.	420
Ormiston	Ormiston	800mks.	2,000mks.	150
	Muirhouses	£220	£500	127
	Mains of Ormiston	-	Doubled	100
Tranent	Longniddry	21ch.grain	30ch.grain	42
	Seton	16ch.grain	24ch.grain	50
	Winton	8ch.grain	12ch.grain	50

farms in lowland parishes such as Tranent, while the more impressive increases tend to come from farms which were situated on the edge of the rolling plateau below the scarp of the Moorfoot Hills. The average percentage increase for lowland farms is 87% while that for upland farms is 299%. The difference may be due to contrasts in the effects of liming. In the lowland parishes, on better soils and with a more favourable climate, it is likely that there would have been less opportunity for expanding the arable area. The principal effects of liming in such areas would probably have been the raising of yields and perhaps the more frequent cropping of outfields. This would have raised rents, but not drastically. In the upland parishes, while there would have been scope for this, liming would also have allowed an expansion of the arable area by taking in land from pasture. Such an expansion would have had a proportionally greater effect on the product of upland farms which formerly might have been mainly pastoral. This may have been responsible for the great increases in rent on such farms as Clerkington, Yorkston and West Halkerstone. Surviving remains of field systems in this area suggest that cultivation was possible up to at least 1100-1150 feet, so that there must have been considerable room for expansion.

Unfortunately, the 1627 Reports are an isolated source. One would expect to find similar changes in rents elsewhere on estates which adopted liming at about the same time. However, rentals and tacks are very scarce for the critical period: the last two decades of the sixteenth and the first three of the seventeenth century. It has not yet been possible to find evidence of the effects of liming in any other areas. It can only be assumed that the impact was in most cases of a similar

magnitude to Midlothian.

This sudden burst of land reclamation and increased production from existing arable areas in the first few decades of the seventeenth century should be reflected elsewhere. One might look for evidence of a decline in the import of grain and a possible increase in exports. Again, the evidence is fragmentary for this early period. However, Lythe has examined the evidence relating to the import and export of grain over this period and has come to the conclusion that there was a substantial decline in imports of grain after the turn of the seventeenth century and a corresponding increase in grain exports (94). He attributed this improvement in the supply of grain to more favourable climatic conditions. There is no real evidence to support this idea and Lamb, in a general consideration of climatic change in Scotland, has come to the opposite conclusion (98)⁵. It seems more likely that this change in grain supplies may have been due, at least in part, to an increase in production due to liming.

3.4 CROPS

Before considering the crop rotations which were in use in Lowland Scotland during the seventeenth century, and then examining the effects of improved rotations and new fertilizers upon yields, it is appropriate to consider briefly the major crops which were grown at this time, their distribution, and their limitations with regard to climate and soil.

94. Lythe S.G.E. *The Economy of Scotland in its European Setting 1550-1625* (1960) p.22

95. Lamb H.H. *The Changing Climate* (1966) p.163

Oats

Oats were the major food crop of Lowland Scotland. They were by far the most important grain in terms of acreage and their place in the economy. Oats frequently occupied most of the courses on the infield and were generally the only outfield crop. Their advantages were related to their tolerance of conditions in which most other crops would have failed. Oats could withstand acid soil conditions, and although their yield was improved by a higher soil pH (see Table 3.2) they produced reasonable crops on very acid soils (96). Oats were resistant to wind and rain, produced a greater quantity of good quality straw than other grains and ripened early (97).

Oats were grown universally, and in some upland valleys they were the only crop which could be grown at all. In the most fertile parts of the eastern Lowlands, their importance was less where other grains and legumes could be cultivated, but their position as the mainstay of most people's diet probably did not alter materially. White oats were a higher-yielding variety requiring better soils, more fertilizers and a milder climate (98). Because of this, they were usually sown as an infield crop in better-favoured areas (99). Grey and black oats were hardier grains, the only varieties which could be grown in exposed upland situations (100). Elsewhere, they were generally sown on outfields (101). The terms infield and outfield oats, muckitland and fieldland oats, or great

96. Thomson J. General View of the Agriculture of the County of Fife (1800) p.160

97. Kerr R. (1809) op.cit. p.245

98. Findlay W.M. Oats (1956) p.17

99. Ibid.

100. Ibid. p.18

101. Ibid.

and small oats were also used to distinguish between white oats and the other varieties.

Bere and barley

Bere, a four-rowed variety of barley, was sown as an infield crop in all but the most marginal areas. Bere was better adapted to acid soils than two-row barley and it withstood adverse weather conditions better (102). Its greatest advantage in the climate of Lowland Scotland was the fact that it could be sown three or four weeks later (103) and harvested three weeks earlier than barley (104) in an average season. Bere formed the "drink crop" of Scottish agriculture and could be ground into a meal if necessary (105).

Barley appears to have been cultivated in only a few of the most fertile areas. It is sometimes difficult to differentiate it from bere in documentary sources. Writers of topographic accounts sometimes refer to "barley" in isolation and it is not clear whether the two-rowed or four-rowed variety is meant. They can only be definitely distinguished when referred to together. The estates on which barley is known to have been grown were situated entirely within the Lothians apart from a reference to the Scott of Raeburn estates at Lessudden in Roxburghshire (106). Barley was grown in the Lothians in a belt from South Queensferry eastwards to Thornton in East Lothian.

102. Sinclair, Sir John (1814) op.cit. I p.494

Thomson J. (1800) op.cit. p.167

103. Fullarton Col. (1793) op.cit. p.26

104. Keith G.S. General View of the Agriculture of Aberdeenshire (1811) p.107

105. Smout T.C. A History of the Scottish People 1560-1830 (1969) p.119

106. NL. MS. 3842

In some cases it is clear that barley and bere were sown together as a mixed crop, known in some areas as "banded bere". This crop was sown on the Dirleton estates in East Lothian (107), at Restalrig near Edinburgh (108), and on the Dundas estates at South Queensferry (109). Banded bere appears to have been a compromise; the barley would have given a higher yield in a good season while the bere would have enabled something to have been salvaged from a bad season.

Wheat

It has sometimes been stated that, prior to the Agricultural Revolution, wheat was not grown in Scotland. Lamb, for instance, while admitting that wheat had been grown on monastic estates in Medieval times, suggested that its cultivation had been abandoned during the sixteenth and seventeenth centuries due to climatic deterioration (110). Other writers have suggested that wheat was only important locally (111). Map 3.5 suggests otherwise. It can be seen that wheat was grown widely in the eastern lowlands and in a few other fertile areas. There is a striking correspondence between this map and Map 8.1 which shows the areas where tenants paid their rents in grain, and which have been presumed from this to have concentrated upon arable production. This implies that there was a link between commercial arable farming and wheat production. This is supported by evidence that wheat did not form part of the common diet of the tenant farmer, even in the areas where it

107. S.R.O. Biel muniments GD 6 1503 (1666)

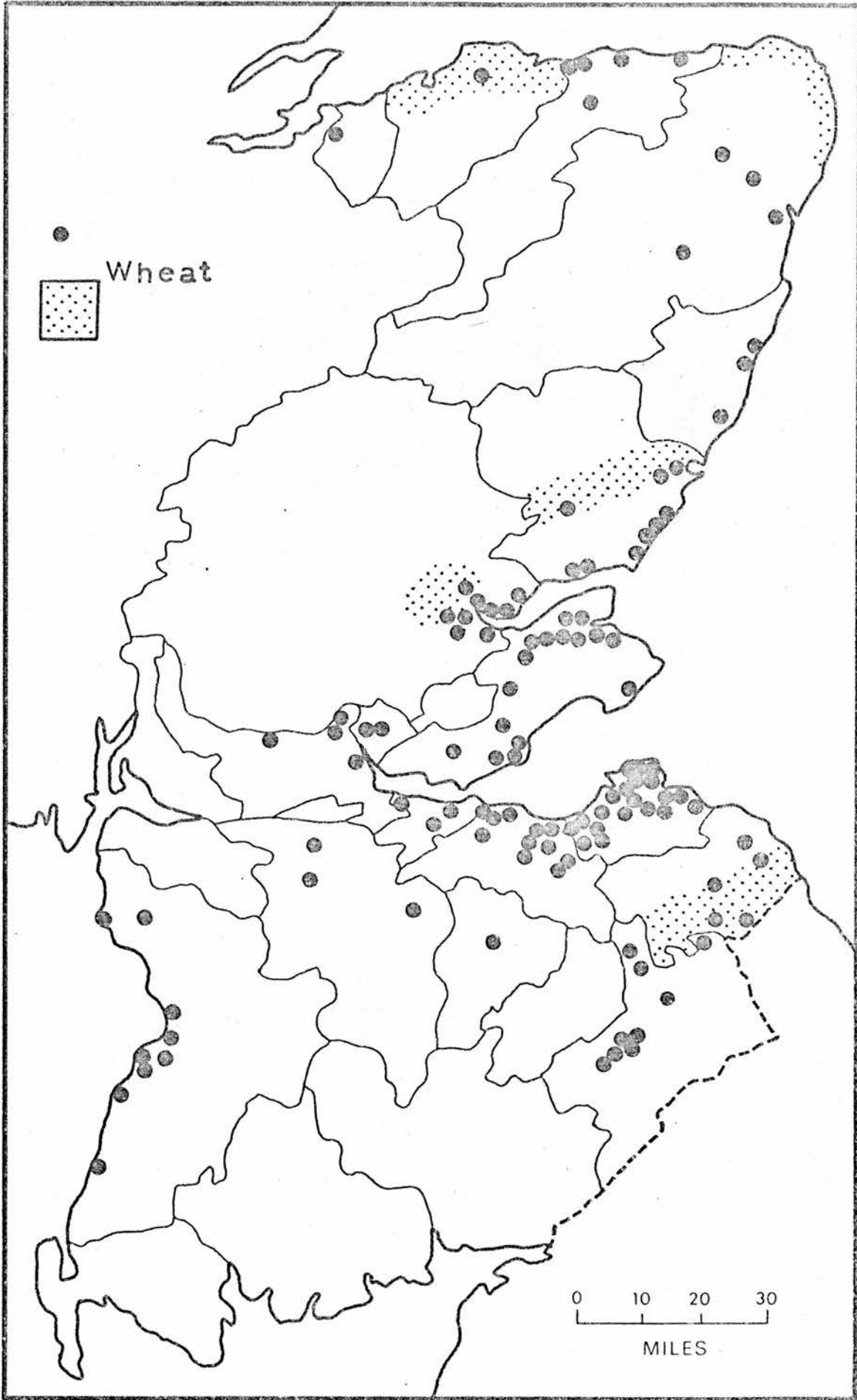
108. Ibid. 1536 (1688)

109. S.R.O. Shairp muniments GD 30 612 (1659)

110. Lamb H.H. (1966) op.cit. p.164

111. Hamilton H. (1963) op.cit. p.103

MAP 3.5 KNOWN INSTANCES OF THE CULTIVATION OF WHEAT



was produced in quantity. On the Leven estates for instance, tenants were actually forbidden to grow wheat unless it was required to be paid as rent (112). The more limited distribution of wheat compared to that of bere or oats was also a reflection of its relative sensitivity to adverse weather and soil conditions.

Rye

Instances of the cultivation of rye are known from many parts of Lowland Scotland (Map 3.6). However, the quantities which were grown were invariably small. Rye was hardly ever required as part of rents in kind and it generally only appears in small quantities in teind returns. Rye was a suitable crop for many parts of Lowland Scotland. It ~~was~~ ^{is} tolerant of acid soil conditions and well-suited to sandy, coastal soils (113). However, it does not appear to have been popular. This may have been a matter of taste in part, although large quantities of rye were sometimes imported from the Baltic in times of dearth (114). Rye was regarded as an exhausting crop in later times (115), and this view may have been current in the seventeenth century. The purpose behind the sowing of small quantities is obscure. Later writers on agriculture described its use in protecting other crops from poultry (116). Poultry apparently would not touch rye or even go through it. It was sometimes sown on outside rigs of infields for this purpose. Other writers have

112. S.R.O. Leven muniments GD 26 5 6 (1626)

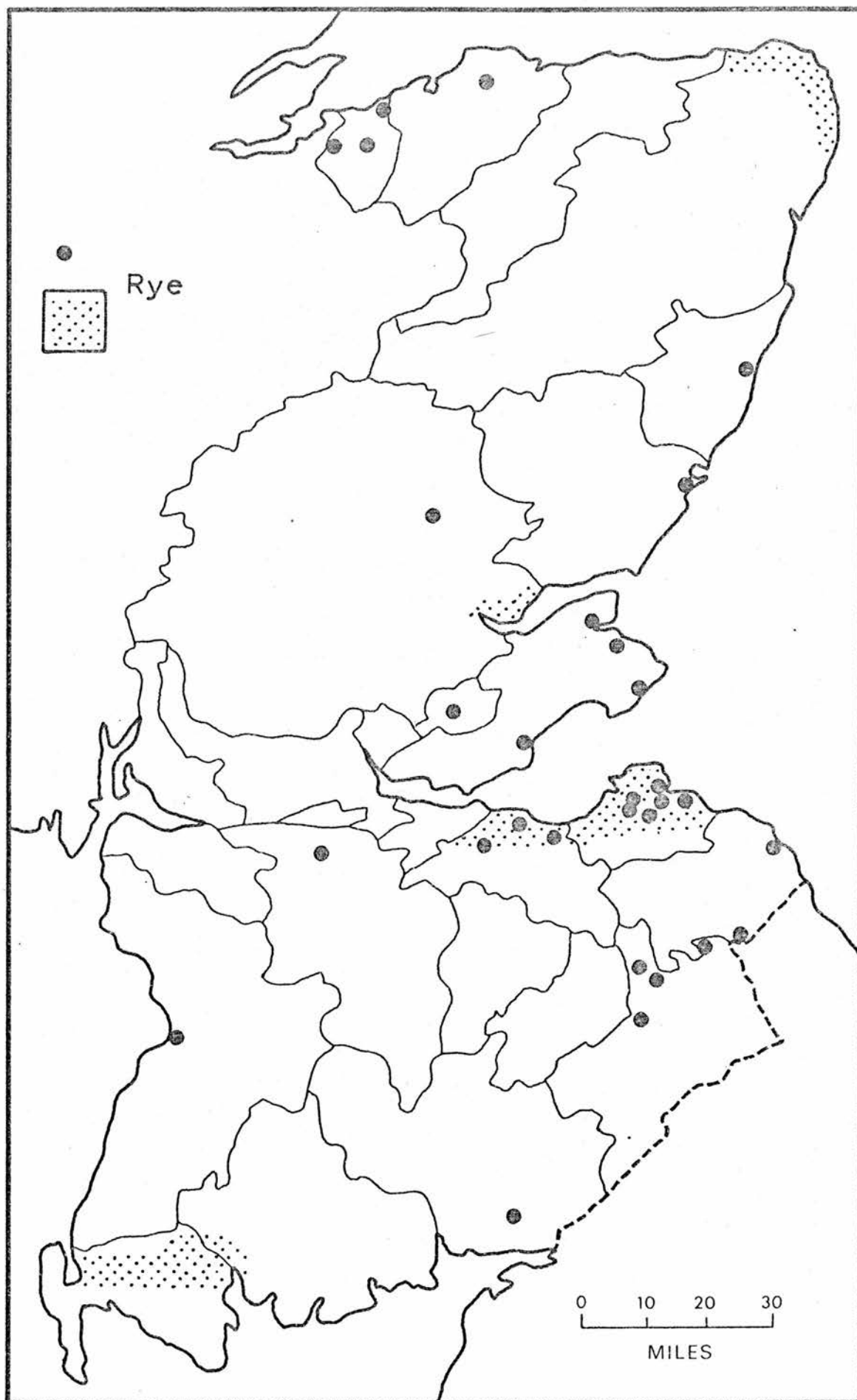
113. Sinclair, Sir John (1814) op.cit. I p.482

114. R.P.C. 3rd series IV (1674) pp.271, 424

115. Handley J.E. (1953) op.cit. p.55

116. Robertson G. General View of the Agriculture of the County of Midlothian (1793) p.67

MAP 3-6 KNOWN INSTANCES OF THE CULTIVATION OF RYE



have stated that it was less likely to be damaged by wind and was therefore sown on windward rigs (117). These practices may have operated at earlier times.

Legumes

The cultivation of peas and beans in Lowland Scotland was more extensive in the seventeenth century than many writers have believed (118). Map 3.7 shows that the distribution of peas was similar to that of wheat but a little wider. Information tends to be less complete than for wheat because peas were rarely required as rent. Most references are to returns for teinds and miscellaneous references in estate accounts. In many cases, legumes may only have been grown in small quantities, in token compliance with acts of local baron courts which perpetuated the well-meaning but ineffectual legislation of James I (119) (see Chapter 2). Legumes appear to have been most important in the Lothians, Fife, the Merse and around the Firth of Tay, the areas which concentrated upon wheat production. This was probably not a coincidence, as will be discussed later.

Peas were a very uncertain crop under Scottish weather conditions. They were sensitive to acid soils and were likely to fail in a wet autumn (120). Later writers claimed that peas might fail entirely in two years out of seven, and then leave the land in a poor state (121). This

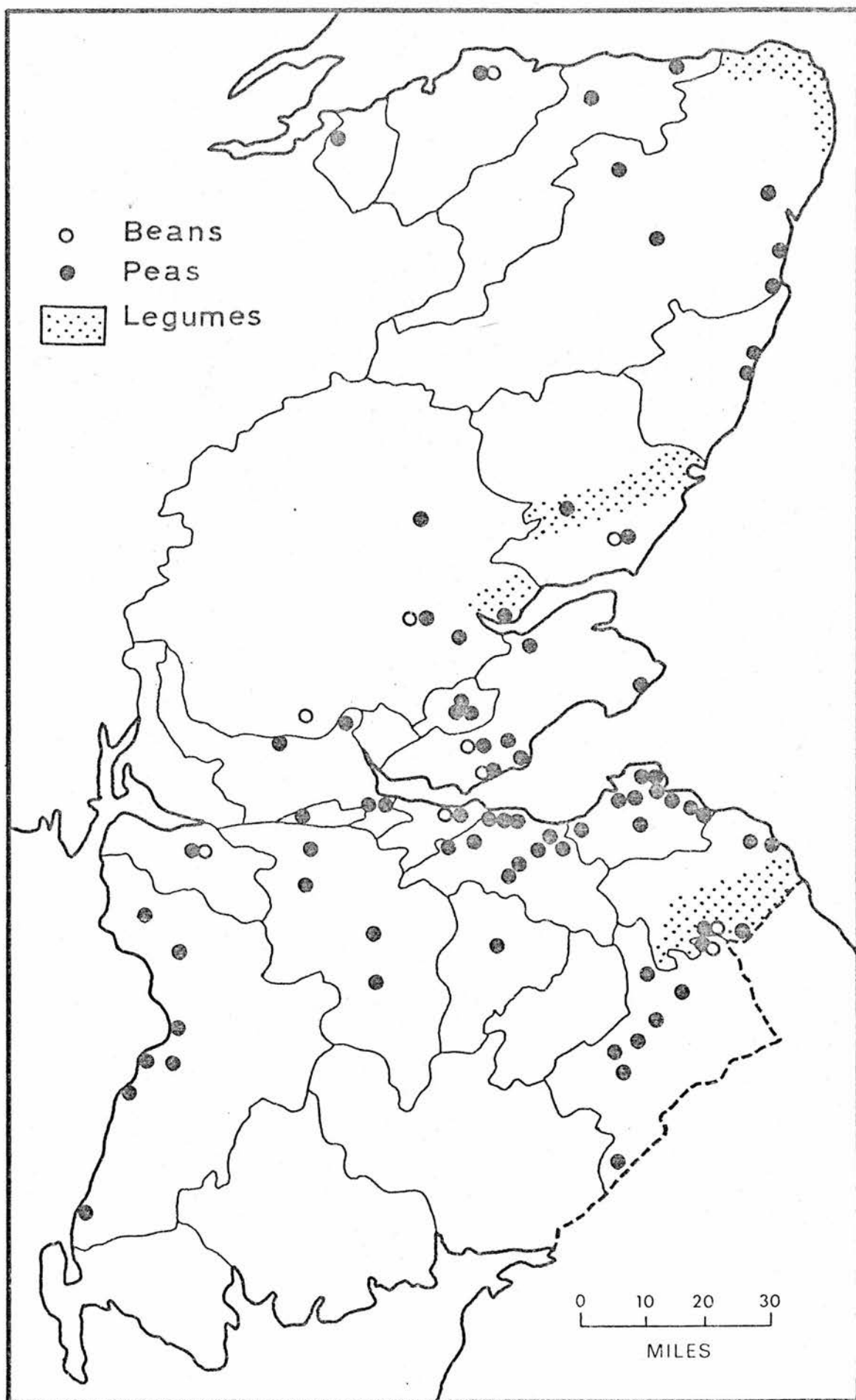
117. Keith G.S. (1811) *op.cit.* p.307

118. Donaldson G. Scotland, James V - James VIII (Volume III of the Edinburgh History of Scotland) (1965) p.242

119. The Forbes Baron Court Book Misc.Scot.Hist.Soc. (1919) III p.283

120. Souter D. General View of the Agriculture of the County of Banff (1812) p.165

MAP 3.7 KNOWN INSTANCES OF THE CULTIVATION OF LEGUMES



is reflected in the low yields of peas which are recorded from some estates in the seventeenth century: yields as low as 2 to 1 and even 1 to 1 are known (122). The minimum estimates of the likely yield of peas recorded in testaments and inventories, were often placed at 2 to 1 compared with the 3 or 4 to 1 which was standard for grain crops (123). It is likely that peas were often cultivated as much for their potentially beneficial effects on succeeding crops as for their own direct value.

Beans were, if anything, more sensitive and more precarious than peas (124). They were sometimes sown with peas as a mixed crop of "mashloe" (125). They appear to have been important only around the Forth and Tay estuaries, and possibly in the Merse.

3.5 CROP ROTATIONS

It has been considered by writers on pre-Improvement agriculture that the traditional infield rotation throughout most of Lowland Scotland was bere/oats/oats (126). It has occasionally been admitted that other crops, particularly wheat and legumes, were sometimes incorporated into infield rotations in a few places, but their role has never been considered an important one, and the rotations which were involved have never been considered in detail.

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- 121. Robertson G. A General View of Kincardineshire (1810) p.272
 - 122. S.R.O. Kinross muniments GD 29 306 (1687)
 - 123. S.R.O. Mar and Kellie muniments GD 124 678 (1598)
 - 124. Souter D. (1812) op.cit. p.167
 - 125. S.R.O. Shairp muniments GD 30 612 (1655)
 - 126. Handley J.E. (1953) op.cit. p.38

The traditional rotation of bere/oats/oats received much criticism from later writers. The sowing of two successive crops of oats was seen as a particularly pernicious practice which exhausted the soil and kept yields at a low level (127). Given the conditions of climate and soil in Lowland Scotland, it must be admitted that, with the contemporary limitations of arable farming techniques, there was no alternative to the cultivation of oats and bere over large areas. However, in areas where environmental conditions were more favourable, the seventeenth-century farmer had two principal means available for increasing the yields from his infields. He could use new fertilizers, as has been discussed above, or he could devise improved rotations which were less exhausting. Ideally, he would combine these methods for greatest effect.

In the context of seventeenth-century Lowland Scotland, there were two principal ways of modifying crop rotations to prevent the exhaustion of the soil by the taking of successive crops of oats. One was to introduce a fallow course into the rotation, preferably between crops of oats or in place of one of them. The other was to introduce a legume course instead of the fallow. The former solution does not appear to have been popular. It is probable that the seventeenth-century farmer thought that bare fallowing was a waste of ground which might have produced something. However, two examples of rotations of bere/oats/fallow are known, from Lochgelly and Monymail, on different estates in Fife. At Monymail, an act of the baron court in 1636 prevented the tenants from taking "oats after oats" and required them to keep a third of

their infields in fallow, with the alternative of a course of peas (128). Tenants at Lochgelly had the same choice (129). In each case, the use of what was virtually a three-field system within the infield was probably encouraged by the higher crop yields which resulted from liming.

The alternative of replacing a crop of oats by a legume course seems to have been more popular. The legumes would have helped to maintain soil fertility, while providing a crop in most years. As Map 3.8 shows, rotations of bere/oats/peas are recorded in Fife, the Lothians and the North East. In every case, peas were sown before bere. This was the basic rotation recommended by Donaldson in his treatise on agriculture published in 1697 (130), and Belhaven stated that it was the standard rotation in the parts of East Lothian where the soil was fairly fertile but where wheat was not grown (131).

Legumes and fallow courses were sometimes incorporated into four-course rotations, possibly on soils which could best take a fallow or legume crop every four years instead of every three. A tack of Clochen, on the Gordon estates near Buckie, indicates that a rotation of bere/oats/oats/fallow, in which the infield had a chance to recover from the effects of two crops of oats, was used (132). On parts of the Penicuik estates, a rotation of bere/bere/oats/peas was practised (133), and on the Innes estates near Elgin, peas/bere/oats/oats was used (134). A

128. S.R.O. Leven muniments GD 26 2 1 (1636)

129. NL. MS. Minto muniments CB 144 (1658)

130. Donaldson J. (1697) op.cit. p.34

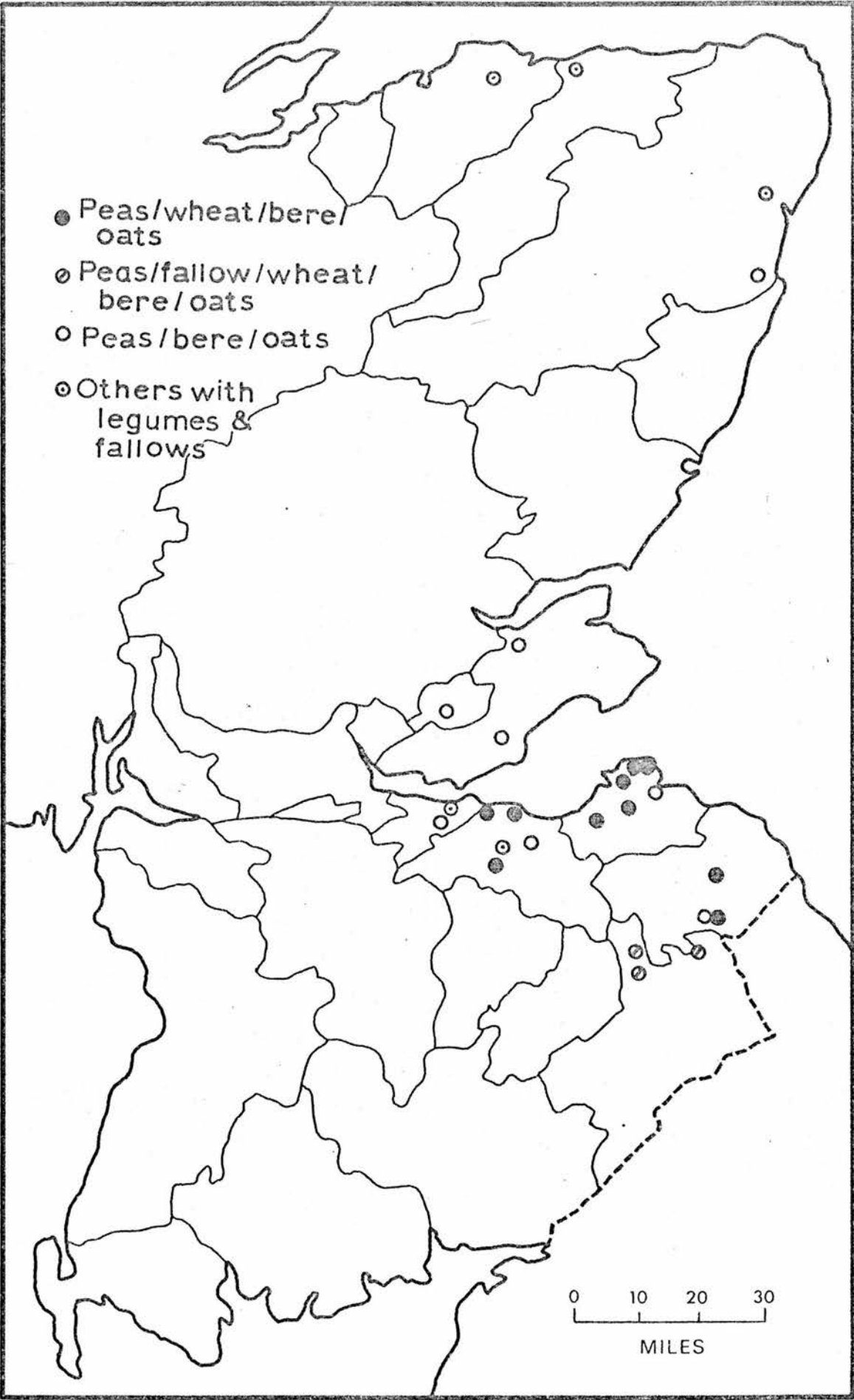
131. Belhaven (1699) op.cit. p.5

132. S.R.O. Gordon muniments GD 44 20 18 (1704)

133. S.R.O. Clerk of Penicuik muniments GD 18 722 (1694)

134. Forbes D. Ane Account of the Familie of Innes (1698) Spalding Club (1864) p.152

MAP 3.8 KNOWN DISTRIBUTION OF IMPROVED ROTATIONS



slightly less demanding combination of peas/bere/fallow/oats was sown near Lochgelly (135).

As has been mentioned above, wheat was primarily a commercial crop which had no place in the diet of the ordinary farmer. As a result, it could not replace oats or bere in the rotation, but had to be added to them. This gave rise to a four-course rotation of peas/wheat/bere/oats. This rotation appears to have been widespread throughout the Lothians, and is also recorded in the Merse and the Central Tweed basin (see Map 3.8). Wheat was considered a fairly exhausting crop, and rotations of wheat/bere/oats without the legume course do not appear to have been common. Only one instance is known, from Letham in Fife (136).

It is probable that the four-course rotation of peas/wheat/bere/oats was a standard one in most places where wheat was an important crop. The balance in this rotation appears to have been a good one. In those areas where lime was available, it was common practice to apply it in preparation for peas (137). Peas thrive particularly well on lime-enriched soils and, in a good season, a fairly high yield was probably obtained (138). This would have resulted in an increase in the amount of nitrogen fixed by the symbiotic bacteria in the root nodules of the legumes. It is probably no coincidence that wheat, the most valuable commercial crop, appears to have followed peas in almost every known example of this rotation. It suggests that the cultivation of peas as a major crop was closely associated with wheat growing, as is implied in Maps 3.5 and

135. NL. MS. Minto muniments CB 144 (1658)

136. S.R.O. Leven muniments GD 26 2 1 (1636)

137. Skene of Hallyards *op.cit.* p.67

138. Somerville R. General View of the Agriculture of East Lothian (1805) p.131

3.7. In addition, Skene of Hallyards makes it clear that the wheat crop received a substantial proportion of the available manure as well (139). Thus, every effort was made to maximise the yields of wheat, the crop on which the greatest profit could be made. This rotation has all the characteristics of one geared towards commercial production and not subsistence.

A variant of this rotation is recorded from the regality of Melrose (140) and from the nearby Scott of Raeburn estates at Lessudden (141). This was the insertion of a year's fallow between the peas and the wheat to give a rotation of peas/fallow/wheat/bere/oats. Dodgshon identified this rotation as being used in Roxburghshire in the 1790s (142). He considered that it was a significant attempt to improve arable farming within the infield-outfield framework. However, it now appears that it was in use in the same area nearly a hundred and fifty years earlier. This rotation may have been designed to maintain a high level of yields, particularly for wheat, in areas which did not have access to lime and where the effective combination of liming and legumes could not be practiced. The fallow may be seen as a direct substitute for liming. Later writers considered that bare-fallowing before wheat was a good practice which greatly reduced weeds (143). However, it is also possible that this rotation was in use in areas where liming was practised. The evidence for rotations involving peas, wheat, bere and oats is mainly derived from

139. Skene of Hallyards *op.cit.* p.67

140. Melrose Regality Records ed. Romanes C. S.H.S. (1915) II p.329 (1672)

141. NL. MS. 3842

142. Dodgshon R.A. (1969) *op.cit.* p.107

143. Sinclair, Sir John (1814) *op.cit.* p.447

Leslie W. General View of the Agriculture in the Counties of Moray and Nairn (1811) p.147

records of the sowing of crops, and in this type of record, mention of fallowing would have been irrelevant.

It is clear that over substantial parts of the eastern Lowlands, farmers were using rotations in the seventeenth century which were considerably more sophisticated than has been previously appreciated. Moreover, in many places these rotations were accompanied by the application of new fertilizers, the most important of which was lime. If liming was the most important seventeenth-century innovation with regard to fertilizers, then the use of legumes and fallows is undoubtedly the most important development in crop rotations. It cannot be claimed from the evidence at present available that their use was a specifically seventeenth-century innovation. However, there appear to be strong links between these practices and liming. The use of legumes and fallowing were also related to wheat growing, which appears to have been very much oriented towards commercial production. It is likely then, that these practices, if not entirely originating in the seventeenth century, may at least have undergone a considerable expansion with the growing commercialisation of arable farming (see Chapters 8 and 9), which took place in the course of the century.

The use of legumes, and particularly fallows, would seem to undermine the traditional concept of the infield as an inefficient means of low-yield continuous cropping. The insertion of a fallow course into a traditional infield rotation makes it effectively a three, four or five-field system operating over the most fertile part of the arable land. When fallowing, the sowing of legumes, liming, and the cultivation of a valuable crop like wheat were combined, a balanced and effective

five-course rotation was produced. Such a rotation may not have been as developed as the later Norfolk system, with its sown grasses and root crops. However, it lay far closer to the Norfolk system than to a rotation of bere/oats/oats with animal manure as the chief fertilizer input, which has been assumed to have been the mainstay of Scottish arable farming prior to the mid-eighteenth century.

3.6 CROP YIELDS

Most previous writers have assumed that crop yields in Scotland before the Agricultural Revolution were uniformly low (144). An overall yield of three to one for oats and four or five to one for bere was thought by Smout to have been normal (145). Three to one was generally regarded as a "break-even" return by which the tenant could meet his rents, maintain his family, and have enough grain left to sow the following year. However, most information about crop yields prior to the later eighteenth century appears to have been derived from writers on agricultural improvement who may well have been biased, or at best, ill-informed. The evidence for the use of new fertilizers and improved crop rotations in parts of Lowland Scotland during the seventeenth century prompts one to look for evidence of the higher yields which should have been associated with these developments.

Direct evidence for crop yields at this period is not very abundant, but enough is available to allow some conclusions to be drawn. The high yields which could be obtained by the use of seaweed, paring and

144. Eg. Hamilton H. (1963) op.cit. p.119

145. Smout T.C. (1969) op.cit. p.68

burning and town refuse have already been discussed. They suggest that not only were high yields possible, but that they could be maintained at a fairly high level from year to year.

It is possible to use an indirect method of calculating approximate average crop yields for rentals where rents for specific acreages are given. This technique provides a valuable means of eking out the scanty direct evidence. It involves a number of assumptions however, and must consequently be treated with some caution. Firstly, the number of bolls of grain which were sown per acre must be estimated. Skene of Hallyards described the traditional quantities used for the four major crops, wheat, bere, oats and peas (146). Working from these, an average sowing of one boll per acre has been used, and this is supported by the records of the quantities actually sown on some estate mains (147).

Secondly, the proportion of the tenant's average product which was paid in rent must be assumed. Traditionally, grain rents were calculated at a third of the average annual product (148). The prevalence of this is indicated by the number of references dealing with land which had just come into cultivation. It was a standard practice to lease such land at "third and teind", that is, a third of the crop for rent, plus teinds, until the land had been in cultivation long enough for the average product to be estimated and a rent fixed (149). It may be argued that

146. Skene of Hallyards *op.cit.* p.68

147. Eg. Melrose Regality Records ed. Romanes C. S.H.S. (1914)
I p.238 (1659)

S.R.O. Buccleuch muniments GD 224 953 3 (1653)

148. Fullarton Col. (1793) *op.cit.* p.71

149. Eg. S.R.O. Makgill muniments GD 82 359 (1663)
S.R.O. Yester muniments GD 28 1617 (1650)

a proprietor might well have charged a higher proportion, as much as half perhaps, for large holdings. This may indeed have been so in some cases, but to guard against the possibility of this, only smallholdings under ten acres have been used. It is unlikely that such holdings would have been rented so highly. They may indeed have been rented lower, and in this case, the calculated yield would be lower than the actual one. The use of smallholdings also reduces the risk of yields being lowered due to a proportion of the acreage being in non-arable land, such as baulks and access paths.

It can be seen that this method would, if anything, under-estimate yields rather than exaggerate them and it is considered to be valid as a crude indicator of average yields. The approximate average yield of a holding under this system is:

$$\frac{\text{RENT} \times 3}{\text{ACREAGE} \times \text{bolls sown per acre}}$$

It is only possible to calculate such yields for the relatively small number of rentals which give both the tenants' names and the acreage of smallholdings in areas where rents were paid in grain. This limits the range of the data to the east coast. It was felt that a mean figure from each estate would have little value, due to varying sample size. Accordingly, maximum and minimum calculated yields for each estate have been given. It can be seen from Table 3.4 that, at the lower end of the scale, approximate average yields of three to one were not uncommon. However, at the upper end, they frequently went as high as six or even nine to one. It must be remembered too, that these figures are, if anything, under-estimations.

TABLE 3.4 CALCULATED APPROXIMATE AVERAGE YIELDS
FOR SOME EAST-COAST ESTATES

<u>County</u>	<u>Estate</u>	<u>Date</u>	<u>Min. yield</u>	<u>Max. yield</u>
Angus	Panmure	1622	$4\frac{1}{2}$	6
	Downie	1692	3	6
	Brechin	1664	$7\frac{1}{2}$	$7\frac{1}{2}$
	Glamis	1669	$6\frac{1}{2}$	$6\frac{1}{2}$
Ayr	Culzean	1661	3	3
Banff	Banff	1627	4	$4\frac{3}{4}$
	Portsoy	1628	$4\frac{1}{2}$	$4\frac{1}{2}$
	Boyne	1636	4	$4\frac{3}{4}$
East Lothian	Dirleton	1630	$4\frac{1}{2}$	9
	Dalrymple	1660	3	9
	Dunbar	1640	6	9
	Innerwick	1703	9	9
	Thornton	1703	9	9
	Hailes	1697	$4\frac{1}{2}$	6
Fife	Lethem	1632	6	10
	Raith	1642	$4\frac{1}{2}$	8
	Murdocairney	1640	$4\frac{1}{2}$	6
	Aberdour	1616	7	9

TABLE 3.4 sheet 2

<u>County</u>	<u>Estate</u>	<u>Date</u>	<u>Min. yield</u>	<u>Max. yield</u>
Midlothian	Cockpen	1627	3	$3\frac{3}{4}$
	Newbattle	1627	$2\frac{1}{2}$	$4\frac{1}{2}$
	Restalrig	1636	$3\frac{1}{2}$	$3\frac{1}{2}$
	Roslin	1663	$4\frac{1}{2}$	6
	Lasswade	1667	6	9
	Cramond	1647	$5\frac{1}{2}$	$7\frac{1}{2}$
	Dalkeith	1651	3	6
	Cousland	1678	3	3
	Tranent	?	5	5
	Cranston	1662	3	3
Peebles	Skirling	1695	$6\frac{3}{4}$	$6\frac{3}{4}$
Perth	Cluny	1640	5	5
	Abercairney	1700	6	$7\frac{1}{2}$
	Meigle	1669	3	$5\frac{1}{4}$
	Alyth	1632	3	$7\frac{1}{2}$
	Duntreath	1630	3	6
Stirling	Falkirk	1640	$4\frac{1}{2}$	6
	Callender	1659	$3\frac{3}{4}$	9

They suggest that yields commonly stood at well above three to one, for smallholdings at least, although it is possible that yields on larger holdings were a little lower, as such land might be less intensively worked. When this evidence is compared with the small quantity of direct evidence, the theory that yields far in excess of three to one were not only possible but frequent under the new systems of arable farming, is supported.

Belhaven considered that yields of up to five to one were standard on infields in East Lothian (150), and Gordon of Troup, five or six to one in the North East (151). Donaldson considered four to one standard and seven to one good (152). With regard to outfields, three to one appears to have been acceptable, but Gordon of Troup writes of yields of up to six and seven to one for the first crop of folded outfield land (153). Both Belhaven and Donaldson believed that such yields could be considerably improved upon by the adoption of their recommended rotations (154). However, it is important to note that the rotations they described were nothing new. Donaldson's rotation of peas/barley (or bere)/oats, was practised quite widely in the Eastern Lowlands by the late seventeenth century, as Map 3.8 shows. Donaldson has suggested that with liming, this rotation might give yields of eight or ten to one (155). Belhaven's rotation of half peas, half fallow/wheat/half peas, half fallow/bere/oats, without liming, was only a variant of the five-course rotation which was practised in the Merse. As Belhaven did not

151. Gordon of Troup (1683) op.cit. p.106

152. Donaldson J. (1697) op.cit. p.47

153. Gordon of Troup (1683) op.cit. p.106

154. Belhaven (1699) op.cit. p.47; Donaldson J. (1697) op.cit. p.47

155. Donaldson J. (1697) op.cit. p.36

advocate the liming of infields (156) this rotation may have produced similar yields to the four-course rotation of peas/wheat/bere/oats, with liming, which was widespread in the Lothians. Belhaven claimed that his rotation would give yields of between six and ten to one (157). It is reasonable to suppose that yields of this order were being obtained for the five-course rotation with fallow and the four-course rotation with liming which have been described above. One must infer that the lower yields which Belhaven, Donaldson and others considered as standard must have been associated with rotations of the bere/oats/oats type, and traditional fertilizers.

Belhaven and Donaldson were not advocating major innovations with regard to rotations. It appears rather that they were selecting the best practices of their day and were trying to spread them more widely. If the rotations they recommended did produce yields of between eight and ten to one, then the independent evidence for crop rotations suggests that such yields should have been widespread in the more fertile parts of the eastern Lowlands.

This has been in part confirmed by the evidence of calculated average yields. Direct evidence of yields is sparse but lends support to this idea. Records of the quantities of grain sown and harvested indicate that yields of up to seven to one were being obtained for bere at Cranston in Midlothian in 1662 (158). On the Dirleton estates in East Lothian, yields of six to one were common for oats, bere, wheat and peas in the early years of the eighteenth century, and yields did not generally fall below

156. Belhaven (1699) op.cit. p.21

157. Ibid. p.14

158. S.R.O. Stair muniments GD 248 93 (1663)

four to one except in the case of peas which were, as has been mentioned, a very variable crop (159).

However, such high yields were not obtained universally. In areas where the climate was too harsh and the soil too poor to permit the successful cultivation of legumes, and lime and other high-yield fertilizers were not available, break-even yields of three to one with traditional rotations of bere/oats/oats were probably normal. The yield of oats on the mains of Crawford and Douglas in Lanarkshire was three and a half, and three to one respectively in 1639 (160). Yields on the Kinross estate, while reaching six to one occasionally for oats, fluctuated more commonly at around three or three and a half to one (161). Symson wrote that three to one was the common yield for oats in Galloway, although four or five to one was not uncommon for bere (162).

The best example of the success of the four-course rotation of peas/wheat/bere/oats used in conjunction with liming, comes from the Dundas estates at South Queensferry (163). Here, accounts of the seed sown and harvested on different plots of the mains are available for the period 1655-1662 and are shown in Table 3.5. The yields are seen to be much higher than the traditional three to one, and are remarkably consistent from year to year. The high yield of bere probably relates to the fact that the rotation in use here was peas/bere/oats/wheat. The peas should have enriched the soil for the particular benefit of the bere. The wheat would have done less well, following the oats, and this is reflected

159. S.R.O. Biel muniments GD 6 1554 (1707-1710)

160. S.R.O. Hamilton muniments GD 237 201 (1639)

161. S.R.O. Kinross muniments GD 29 306 (1687)

162. Symson A. (1684) op.cit. p.102

163. S.R.O. Shairp muniments GD 30 612 (1655)

TABLE 3.5 CROP YIELDS ON THE DUNDAS ESTATES 1655-1662

<u>Year</u>	<u>Wheat</u>	<u>Bere</u>	<u>Infield oats</u>	<u>Outfield oats</u>
1655	6.5	14	11.25	9
	6.5	20	8.5	5.25
	4		11.25	8
	6.75		11.25	7
			11.5	8.5
				8.25
				9.5
	Mean	5.94	17	10.75
				7.92
1656	4.25	12	7.25	4.8
	4	6.75		9
	4.25	7.25		8
	6			5.75
	5			6.75
	5.5			
	Mean	4.83	8.66	7.25
				6.86
1657	6.5	11	10.25	6.3
	4.75	11.5	7.5	8
		9.5	6	7
		10.5		7
				6.5
				11
	Mean	5.63	10.62	7.92
				7.63
1658	5	7	9	6.25
	5	15	8.5	9
	3.75	18	12	10
		12	10	7.5
		13.5		8.5
				12
	Mean	4.58	13.10	9.87
				8.88

TABLE 3.5 sheet 2

<u>Year</u>	<u>Wheat</u>	<u>Bere</u>	<u>Infield oats</u>	<u>Outfield oats</u>
1659	7.5 6.5 6.5 6	18.75 20	8 5.75 8 10 6.75 6.75 10	6 10.5 14 8.75 14
Mean	6.62	19.36	7.89	10.65
1660	4.5 4 3 8 4.75 4.5 3.5	9.5 11	6.5 6 10	8 7 4.5 5
Mean	4.60	10.25	7.50	6.12
1661	6 8	8 8.5 24 8	11 9.25	12.25 11 10 13
Mean	7.0	12.13	10.13	11.56
1662	7 5.75 6.5 3.5	19.5 11 9 7 8.5	7 7 6 10.5	10 9 9
Mean	5.69	8.71	8.71	8.48
OVERALL MEAN	5.39	12.03	8.71	8.48

in the comparatively low yields for wheat. It is also interesting to note that the yields which were obtained from the outfields with a combination of liming and folding, on a rotation of five years of oats, four years of fallow, were almost as high as the yield of infield oats. The sharp distinction in the intensity of cropping between infield and outfield was beginning to become blurred on such estates. This provides the best example of the yields which could be obtained from a combination of a developed rotation and new fertilizer inputs. If such yields were being obtained widely in areas which had access to lime, and could practice rotations of this sort, then substantial parts of the eastern Lowlands must have been concentrating on high-yield commercial grain production by this time.

If these yields are considered to be fairly representative of the level of yields which could be obtained from this sort of rotation and the use of lime, then they do not compare so unfavourably with yields which were obtained after the Agricultural Revolution. Robertson, in his account of the agriculture of Midlothian in 1793, considered that yields of barley might be as high as thirteen to one but were more commonly about eight to one. Wheat might give up to sixteen to one but the average was seven or eight to one, and yields as low as five to one were not infrequent (164). Comparisons such as these must be made with caution. However, they do suggest that the yields which were being obtained from the most fertile areas of Lowland Scotland under the most developed arable practices available could, in the seventeenth century, match the standards that the later Improvers were able to spread more widely.

164. Robertson G. (1793) *op.cit.* pp.61-66

3.7 CONCLUSION

The foregoing study suggests that in west coast areas and upland valleys, which were less suited to crop production on account of climatic conditions, poverty of the soil, or shortness of the growing season, options were limited. Under the techniques of contemporary arable farming, legumes were a risky crop and wheat did not thrive. Many of these areas were thus restricted in their rotations to the cultivation of bere and oats, and only limited areas had access to high-yield fertilizers. In these areas, yields appear to have been in general fairly low, probably averaging between three and five to one.

However, in the eastern Lowlands, which were better suited to crop production, extensive areas had, by the late seventeenth century, adopted improved rotations involving legume and fallow courses. These were coupled in many areas with the use of new high-yield fertilizers, the most important of which was lime, which can be shown to have been a seventeenth-century innovation. Other high-yield fertilizers such as seaweed, town refuse and paring and burning, allowed high yields to be obtained in some areas which did not have access to lime. These cannot be proved to have been definite seventeenth-century innovations, but it is likely that their use at least increased greatly during this period. The combination of new fertilizers and improved rotations changed the traditional infield-outfield system in the most favoured parts of the eastern Lowlands. The new system was a sophisticated and fairly well-balanced method of cropping in which comparatively high yields could be obtained

consistently. Under the impact of these changes, the traditional infield-outfield framework was becoming less meaningful. The recommendations of the late seventeenth-century writers on agricultural improvement do not appear as innovations. They were merely a selection of the best contemporary practices.

The achievements of the eighteenth-century Improvers must, in view of this, be seen in a slightly different light. It has previously been considered that the first high-yield cropping systems were introduced at this period. It now appears that pre-existing high-yield systems were improved upon. The major achievement of the eighteenth century in terms of arable farming may have been the improvement of the infrastructure of agriculture by the breaking up of runrig and the development of enclosure, rather than the introduction of new systems of arable farming. Improvements in communications allowed the new high-yield systems to be diffused much more widely than the localised areas in which the seventeenth-century high-yield systems had been confined by the limitations of contemporary technology.

Important

CHAPTER IV

TWO FACETS OF A DEVELOPING ECONOMY:
THE DROVING TRADE AND
THE EXPANSION OF THE ARABLE AREA

4.1 INTRODUCTION

In this chapter, two of the most important trends in the seventeenth-century agrarian economy of Lowland Scotland will be considered. The growth of the droving trade was the most significant development in pastoral farming during this period. At the time of the Union, its scale was still small compared to what it was to reach in the eighteenth and nineteenth centuries (1). However, it was already sufficiently important to merit special attention on the part of the Commissioners for Union (2). It had reached this position in the Scottish economy almost entirely during the second half of the seventeenth century. In doing so, droving had transformed Galloway, formerly one of the more backward areas of Lowland Scotland, into a major commercial producer of store cattle. By 1707, the Highlands were beginning to enter into the trade as well, and the long-distance droving routes between Northern Scotland and South-eastern England were becoming established.

Parallel to the growth of droving, changes in arable farming occurred during the seventeenth century. Some of these have been considered in

1. Haldane A.R.B. *The Drove Roads of Scotland* (1952) pp.204-205

2. Smout T.C. *Scottish Trade on the Eve of the Union 1660-1707* (1963) p.264

Chapter 3. However, the chapter was principally concerned with the development of high-yield cropping systems, utilising new fertilizers and rotations, in the more fertile areas of Lowland Scotland. There is evidence for another important change in the arable sector: the expansion of the cultivated area. This topic was only touched upon in Chapter 3 and is worthy of more detailed consideration.

The development of high-yield cropping systems represented the introduction of new and more advanced techniques over limited areas of Scotland. By contrast, the expansion of the margin of cultivation represented a more traditional means of increasing production in less favoured areas. However, this expansion had many features which marked it as a specifically seventeenth-century trend and which linked it to other developments in the agrarian economy.

4.2 THE DROVING TRADE

One of the fastest-growing branches of Scotland's export trade in the later seventeenth century was the droving trade with England. The origins of droving are obscure. There had probably been a sporadic trade in live-stock across the Border for centuries in times of peace. However, the intermittent wars with England during the sixteenth century, notably the campaigns of 1513 and 1542-47, as well as the internal unrest which broke into civil war in the 1560s and 1570s, kept the Borders in a state of perpetual turmoil (3). Regular traffic could not have begun on a large

3. Smout T.C. *A History of the Scottish People 1560-1830* (1969) pp.96-98

scale before the Union of the Crowns in 1603 and the subsequent pacification of the Borders. There is likely to have been a substantial time-lag while the area quietened down and the inhabitants turned their attention to raising animals instead of stealing them (4). Accounts among the Buccleuch muniments indicate that, by the middle of the century, these estates were selling in Carlisle some of their teind cattle from Eskdale and Teviotdale (5). There are also some indications that the tenants on the Buccleuch estates were beginning to exploit English markets by this time (6). The droving trade only began to achieve real prominence after the Restoration however.

Three influences which contributed to this sudden development may be suggested. The first of these was the rapid growth of urban markets in England during the second half of the seventeenth century. The population of London expanded greatly at this time and the size of many provincial towns increased in proportion (7). Demand for livestock products, including fresh meat, was stimulated by this.

The second influence was the passing by the English Parliament of the Irish Cattle Act in 1666 (8). This act effectively excluded Irish livestock rearers from the English market. Scottish cattle had previously competed on very unfavourable terms with Irish animals. The latter appear to have been heavier, larger and readily distinguishable from

4. It is a mistake to think that the Borders became peaceful overnight. Theft and blackmail still went on, though much more strictly controlled after 1603. For indications of this see S.R.O. Buccleuch muniments GD 224 943 2 (1625) and 938 38 (1685)

5. Ibid. 943 4

6. Ibid. 935 3

7. John A.H. The Course of Agrarian Change 1660-1760 in Essays in Agrarian History ed. Minchinton W.E. (1968) I pp.224-233

8. P.R.O. SP 29/176 no.130

Scottish beasts (9). This allowed them to compete favourably for the English market even with Galloway, whose cattle tended to be larger and better fed than other Scottish animals (10). This competition existed despite the extra distance over which the Irish animals had to be driven and the expense of their sea passage. One of the earlier exchequer records for the South Borders customs precinct records what appears to have been a through trade in cattle from Ireland to England via Galloway. The exports of this precinct between 1st November 1665 and 1st November 1666, on the eve of the passing of the Irish Cattle Act by the English Parliament, included 7,295 Irish cattle and only 1,045 Scottish animals (11). The former were presumably shipped from Ireland to ports such as Stranraer and then driven through the Solway Lowlands to England.

The existence of this through traffic may have acted as a spur to local landowners to enter into competition and their position was greatly improved by the Act of 1666. The Scottish Privy Council also acted in favour of home producers by banning the import of Irish livestock into Scotland (12). This prevented any possibility of the through traffic continuing illegally.

The way now lay open for the Galloway landowners to expand. With the exclusion of Ireland from the English market as a source of lean stock, prices rose and areas like Northern England and Southern Scotland were well situated to make increasingly large profits (13). This opportunity

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- 9. Chambers R. Domestic Annals of Scotland (1874) III p.153
 - 10. Handley J.E. Scottish Farming in the Eighteenth Century (1953) p.71
 - 11. S.R.O. Exchequer Records, second series E 72 2 1
 - 12. R.P.C. 3rd Series III (1669) p.145

was not missed by proprietors in the South-western Lowlands. As will be considered in Chapter 5, landowners in this area began to experiment with the improvement of their livestock by selective breeding with Irish cattle specially imported by licence of the Privy Council (14). Also, improved techniques of pasture management involving the use of enclosures and the better provision of winter fodder were experimented with. These must all have contributed towards improving the quality of the animals. By 1683 the cattle sent to England by Sir David Dunbar from his cattle park at Baldoon near Wigtown, were of such a size and quality that they were mistaken for Irish cattle and slaughtered in error (15).

The third influence was the lowering of customs duties at the Border. In the early part of the seventeenth century, the export duties on livestock passing across the Border had been considerable. Haldane quotes a figure of £10 Scots per head of cattle and £5 Scots per calf in 1612 (16). These high duties appear to have been designed to protect the home market by preventing shortages of meat at home through over-zealous exporting (17). This need seems to have declined during the course of the seventeenth century. Livestock production within Lowland Scotland, and perhaps in the Highlands as well, appears to have expanded more than sufficiently to meet the demands of a growing home market (see Chapters 8 and 9). There was a definite boom in sheep rearing in the

13. Thirsk J. *Seventeenth Century Agricultural and Social Change* Ag.H.R. XVIII (1970) p.149

14. Chambers R. (1874) *op.cit.* III pp.152-153

15. R.P.C. 3rd Series VIII (1683) p.153

16. Haldane A.R.B. (1952) *op.cit.* p.16

17. Fraser W. *Memorials of the Maxwells of Pollock* (1863) p.78

Borders following the peace which resulted from the Union of 1603 (18). It is likely that the rearing of cattle in the Western Borders also expanded as a result of this. At all events, the position of the home market was sufficiently secure in the years following the Restoration for the import of Irish livestock to be banned (19).

The lowering of customs duties on livestock can be seen as part of the policy of encouraging exports from a country where agricultural production was expanding faster than home demand was growing. It can be considered as a pastoral counterpart to the incentives to export grain which contributed towards a continuing growth of arable production (see Chapter 9).

In 1669, customs duties on livestock crossing the Border to England were abolished (20), although the exchequer records for the 1680s indicate that duties of some kind were being exacted (21). It is not clear whether they had been re-imposed or whether they represented a payment which had been excluded from the 1669 act. What is certain is that the charge was only 10s Scots per head of cattle in the 1680s (22), a twentieth of the duties which had been charged at the beginning of the century.

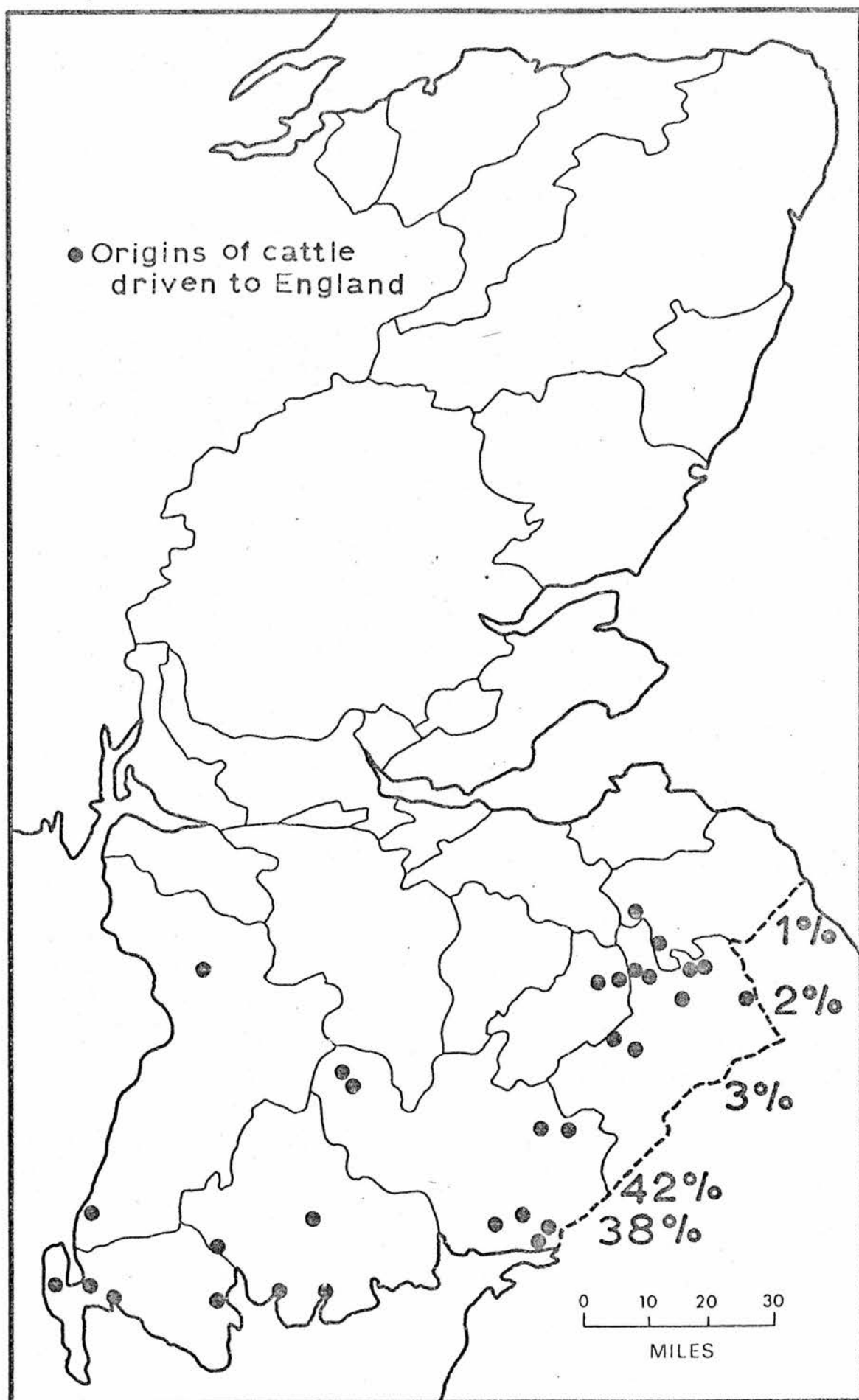
Although figures are not available for the whole period, the general impression is that the droving trade expanded fairly rapidly in the late seventeenth century. The exchequer records for the Border precincts have only survived for a limited series of years in the 1680s and early 1690s (Tables 4.1 and 4.2). Nevertheless, they allow the scale of the droving trade towards the end of the century to be assessed.

18. R.P.C. 1st Series XIII (1623) p.774

19. R.P.C. 3rd Series III (1669) p.145

20. Ibid. 16

MAP 4.1 DROVING OF CATTLE



Map 4.1 shows the known origins of Lowland cattle which were driven to England. The identification of the sources of the livestock which crossed the Border is difficult. The customs books generally record the names of the drovers who paid the duties and not those of the landowners who sent the cattle. The information has been assembled partly from chance references in the exchequer records and partly from estate papers and miscellaneous sources. It can be seen that the cattle originated from quite a wide area of Southern Scotland, from North Ayrshire to Lauderdale. However, the most important cattle-rearing areas lay in the Southwest. An attempt has been made to show this by giving the average percentage of traffic passing through each customs precinct for the four years, 1681-82, 1683-84, 1684-85 and 1690-91, for which virtually complete data are available. The predominance of the two most westerly precincts is obvious, suggesting that the Solway Lowlands, Nithsdale and Annandale were the major centres. However, it must be borne in mind that traffic from the Highlands must have been a component of some of the precincts, particularly of the South Borders customs area.

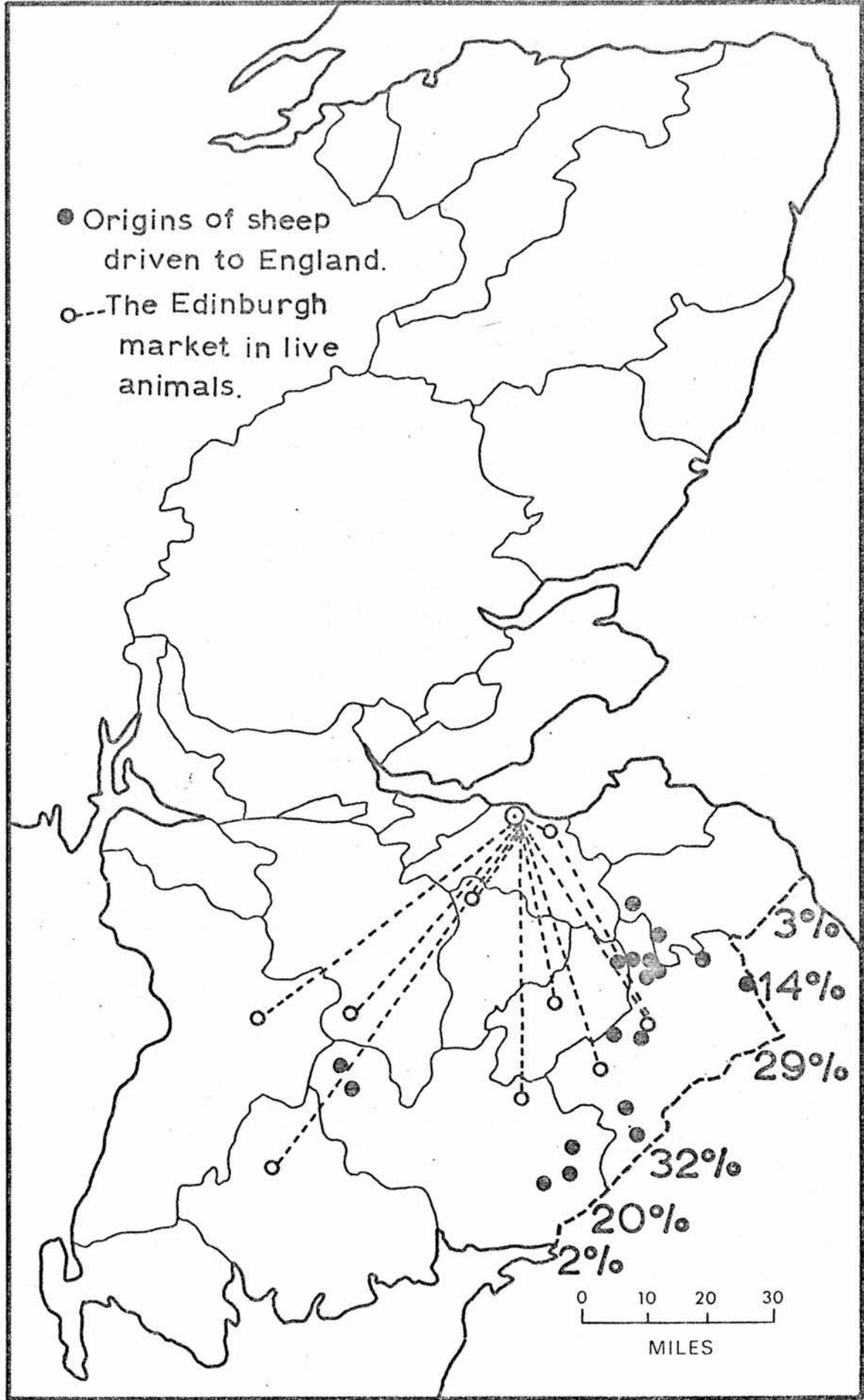
The exchequer records also reveal a considerable trade in live sheep across the Border which has never been appreciated before. Haldane considered that sheep were not as suitable for droving over long distances as cattle and that they did not figure significantly in the droving trade before the end of the eighteenth century (23). However, Table 4.2 shows that sheep were being sold across the Border in large numbers by the late seventeenth century. Map 4.2 shows the known origins of this traffic,

21. S.R.O. Exchequer Records, second series E 72 2, 4, 6, 13, 16

22. Ibid.

23. Haldane A.R.B. (1952) *op.cit.* p.200

MAP 4.2 DROVING OF SHEEP AND THE EDINBURGH MARKET



again compiled from a variety of sources. Average percentage figures for traffic passing through the customs precincts for the years mentioned above show that the most important source areas for the droving of sheep were in the Central Borders: Eskdale, Teviotdale, Liddesdale and probably Ettrick Forest. These were areas which had been noted as great sheep runs since monastic times (24). The entries for Ayton and Duns suggest that the Lammermuirs were also involved, though in a small way. The South-western Lowlands were not important in this trade.

The numbers of cattle and sheep recorded for each customs precinct for the years for which fairly complete information is available are shown in Tables 4.1 and 4.2. They indicate that up to 30,000 cattle and slightly more sheep crossed the Border in any year towards the end of the seventeenth century. The annual figures were however liable to considerable variation. The decline of the trade after the Revolution of 1688 is very noticeable. This may be attributed to the uncertain political state of the country which is known to have disrupted other branches of the economy (25). In view of the military action in the Highlands at this time, it would be reasonable to suppose that the component of the cattle-droving trade which was derived from there would also have been drastically reduced at this time.

Thirty thousand cattle a year might not seem a very large figure to be a major force in the country's economy. However, the comparatively

24. Ryder M.L. The Evolution of Scottish Breeds of Sheep Scot.Stud. XII (1968) pp.146-147

25. For instance, a timber contract among the Fraser Charters (GD 87 75 2 (1690)) contained an unusual clause extending the period over which the timber was to be cleared if its sale was prevented "on account of the troubles in the country".

TABLE 4.1 NUMBERS OF CATTLE DRIVEN ACROSS THE BORDER
TO ENGLAND

<u>Customs precinct</u>	<u>Dumfries</u>	<u>South Borders (Alisonbank)</u>	<u>Castleton</u>	<u>Jedburgh</u>
Customs year 1 Nov.-31 Oct.				
1665-66		7,292 Irish 1,045 Scots		
1672-73				209
1680-81	1,273	2,089	Inc. in S.B.	-
1681-82	9,053	4,641	1,784	330
1682-83	10,500	11,503	3,346	1,076
1683-84	4,865	4,480	1,993	532
1684-85	9,090	10,639	Inc. in S.B.	903
1685-86	-	14,747	4,799	1,828
1688-89	7,528	8,088	-	244
1689-90	4,569	5,554	-	199
1690-91	801	3,694	1,011	155
Inc. in S.B. = Included in South Borders				

	<u>Kelso</u>	<u>Ayton and Duns</u>	<u>Minimum total for all precincts</u>
1665-66			
1672-73	228		
1680-81	108	156	4,346
1681-82	261	267	16,336
1682-83	1,438	-	27,863
1683-84	607	87	12,564
1684-85	251+	282	21,065
1685-86	1,586+	1,122	24,082
1688-89	141	225	16,226
1689-90	60	9	10,391
1690-91	67	17	5,745

TABLE 4.2 NUMBERS OF SHEEP DRIVEN ACROSS THE BORDER
TO ENGLAND

<u>Customs precinct</u>	<u>Dumfries</u>	<u>South Borders (Alisonbank)</u>	<u>Castleton</u>	<u>Jedburgh</u>
Customs year 1 Nov.-31 Oct.				
1665-66	-	6,625	-	
1672-73	-	-	-	170
1680-81	823	1,363	Inc. in S.B.	2,672+
1681-82	230	3,163	6,492	8,540
1682-83	692	4,850	7,600	11,870
1683-84	300	4,284	6,010	5,366
1684-85	160	12,552	Inc. in S.B.	1,988
1685-86	-	6,616	6,160	10,864
1688-89	340	4,907	-	4,280
1689-90	164	6,740	2,832+	4,092+
1690-91	20	7,398	-	6,375

Inc. in S.B. = Included in South Borders

	<u>Kelso</u>	<u>Ayton and Duns</u>	<u>Minimum total for all precincts</u>
1665-66	-	-	-
1672-73	112	-	-
1680-81	234	1,419	6,511
1681-82	4,914	395	23,734
1682-83	7,178	-	32,190
1683-84	2,735	184	18,879
1684-85	909+	684	16,293
1685-86	3,740+	1,264	28,644
1688-89	671	609	10,807
1689-90	1,643	285	15,306
1690-91	80	65	13,938

small scale of the Scottish economy at this time must be borne in mind. In addition, it must be admitted that there is no way of knowing how many cattle and sheep entered England without paying customs duties. The Border was a long one and the collecting centres were few and far between. Opportunities for the evasion of such payments may therefore have been numerous.

One of the most important aspects of the cattle trade was the beginning, towards the end of the seventeenth century, of droving from the Highlands into Lowland Scotland and beyond. Highlanders had probably sold livestock at market centres along the upland fringe for centuries. Some references indicate that this was done during the sixteenth century (26). However, organised large-scale droving does not appear to have developed before the seventeenth century.

By the end of the century, droving from the Highlands to England had become well established. Accounts for the Buccleuch estates indicate that between 1698 and 1700, the commissioners for the estates were buying herds of cattle at Falkirk and Dundee from drovers with names like Duncan Campbell and Torquil McNeill - almost certainly Highlanders (27). The animals were then driven south and crossed the Border at Castleton (28).

An account of the sale of 1,000 cattle belonging to Sir High Campbell of Cawdor survives among the Cawdor muniments (29). The cattle were

26. Eg. Bishop Leslie History of Scotland (1578) in Brown P.H. Scotland before 1700 (1893) p.128

27. S.R.O. Leven muniments GD 26 479 (1698-1700)

28. Ibid.

29. The Book of the Thanes of Cawdor Spalding Club (1859) p.351 (1680)

sent from Islay to Falkirk where they were sold to William Scott of Langhope and John Thomson of Platt. The names of these two drovers appear frequently in the exchequer records in the 1680s, driving cattle across the Border at Castleton (30). The editor of the printed selection of the Cawdor papers states that the contract was typical of a large number which had survived.

Although the two examples quoted above indicate that the cattle changed hands from Highlander to Lowlander at Falkirk, other evidence indicates that many Highlanders took droves all the way to the Border and beyond. The Register of the Privy Council, in 1688, recorded a dispute in which two Highlanders, having accompanied a drove of cattle to England were, on their return, imprisoned by the clerk of the Regality of Annandale (31). In this case, the cattle had been bought from various people in the neighbourhood of Loch Awe. They had been sold to an English buyer at Falkirk, and eight Highlanders had contracted to drive the animals south.

Another trend which suggests an increasing involvement of the Highlands with the cattle trade and a consequent linkage with the Lowlands was the taking in of Lowland cattle on to the summer shieling grounds in the Eastern Grampians. This was often strictly illegal when done contrary to the provisions of tacks and feu charters (32), but it appears to have been sufficiently lucrative to have been worth the risk of prosecution.

The result of this was an overstocking of traditional shieling grounds in some areas. To counter this, tenants and feuars tended to push their

30. Eg. S.R.O. Exchequer records, second series E 72 10 1681-82

31. R.P.C. 3rd series XIII (1688) p.301-304

32. S.R.O. Mar and Kellie muniments GD 124 102 (1707-1712)

shielings further up the glens into the deer forests of their landlords and superiors. This process was described on the Mar estates at the beginning of the eighteenth century. Feuars on Deeside were extending their shieling grounds back into the heads of the glens south of the Dee. This had turned the deer forest, in summer, into a vast cattle range between Deeside, the Angus Glens and Glen Tilt (33).

The droving trade should not be viewed merely as a trade with England. The export trade has achieved prominence because of its importance to the country as a source of revenue, but there was also a home urban market for animal products and the little evidence which is available for it suggests that it may have been expanding in the later seventeenth century (see Chapters 8 and 9). Map 4.2 shows the known extent of the influence of Edinburgh as a market for live animals. It can be seen that Edinburgh provided an alternative market to England for Galloway cattle and sheep from the Borders, though presumably on a much smaller scale. The Buccleuch family had a well-organised system whereby teind sheep were fattened in parks at Branksholme, near Hawick, and then sent to Dalkeith, near Edinburgh, for further fattening before being sold to Edinburgh butchers (34).

Glasgow also provided a growing market for meat products. As early as 1635, Glasgow merchants were buying cattle from landowners in Islay (35). The flow of live animals into the coastal burghs may have been partly to supply the export trade in barrelled salt meat, a commodity which appears in some quantity in the port books of burghs like Aberdeen (36).

33. S.R.O. Mar and Kellie muniments GD 124 102 (1707-1712)

34. S.R.O. Buccleuch muniments GD 224 3 (1655), 943 15 (1658)

35. The Thaness of Cawdor (1859) *op.cit.* p.278 (1635)

By the end of the seventeenth century, the cattle droving trade appears as a fully-fledged system. All the elements of the later droving trade were present by the time of the Union in 1707. The involvement of the Highlands, the great cattle trysts at Falkirk and the long drive across the Border to destinations as far south as Norwich (37), had already developed.

More significantly for Lowland Scotland, Galloway had, as a result of the demand, undergone a minor revolution in her agricultural production. Instead of being a relatively backward area, Galloway was, by the end of the seventeenth century, a major innovator. Selective breeding, new techniques of husbandry and, above all, widespread enclosure, seem to have developed earlier and on a larger scale here than in other parts of Lowland Scotland (see Chapter 5). As time went on, Galloway's share of the trade fell proportionally with the rise of droving from the Highlands. However, the early stages of the droving trade gave a great boost to the agrarian economy of this area and to the pastoral sector of the agriculture of Lowland Scotland as a whole.

4.3 THE EXPANSION OF THE ARABLE AREA

4.3.1 Liming

One of the most marked expansions of the arable area appears to have taken place on the plateau country of the Central Lowlands with the aid

36. Eg. S.R.O. Exchequer Records, second series, E 72 1 5 (1680-81)

37. S.R.O. Leven muniments GD 26 544 (1688)

38. Reports on the State of Certain Parishes in Scotland 1627 Maitland Club (1835) pp.40, 94-97, 66-67

of liming. This involved the spread of arable farming on to the high moors which are generally developed on Carboniferous strata, at altitudes of between 750 and 1,000 feet or more. The approximate extent of these surfaces is shown on Map 4.3. The parish reports of 1627 clearly refer to the conversion to arable of large areas of pasture in the parishes of Borthwick, Temple and Fala and Soutra, in Midlothian (38). In Borthwick parish it was stated that "the haill bounds of the saids lands that can be made arrable are riven out, manured and sowne" (39). The farms in question were mostly situated at altitudes of 600-700 feet or even higher and there was a belt of rolling plateau country up to two miles wide between them and the escarpment of the Moorfoot Hills, on to which cultivation could have been extended.

Other references relate to the expansion of cultivation by means of liming on to the plateau of Auchencorth Moss, in the southern part of Midlothian and Northern Peeblesshire (40). There are indications of a similar expansion on to the moors in the north-east of Lanarkshire (41). The position with regard to western Lanarkshire and Ayrshire is not clear. Liming is known to have been practised in these areas, but no evidence of a similar burst of reclamation has come to light. It is possible that the higher rainfall in these areas prevented the expansion of arable farming to the same altitude as in the Lothians.

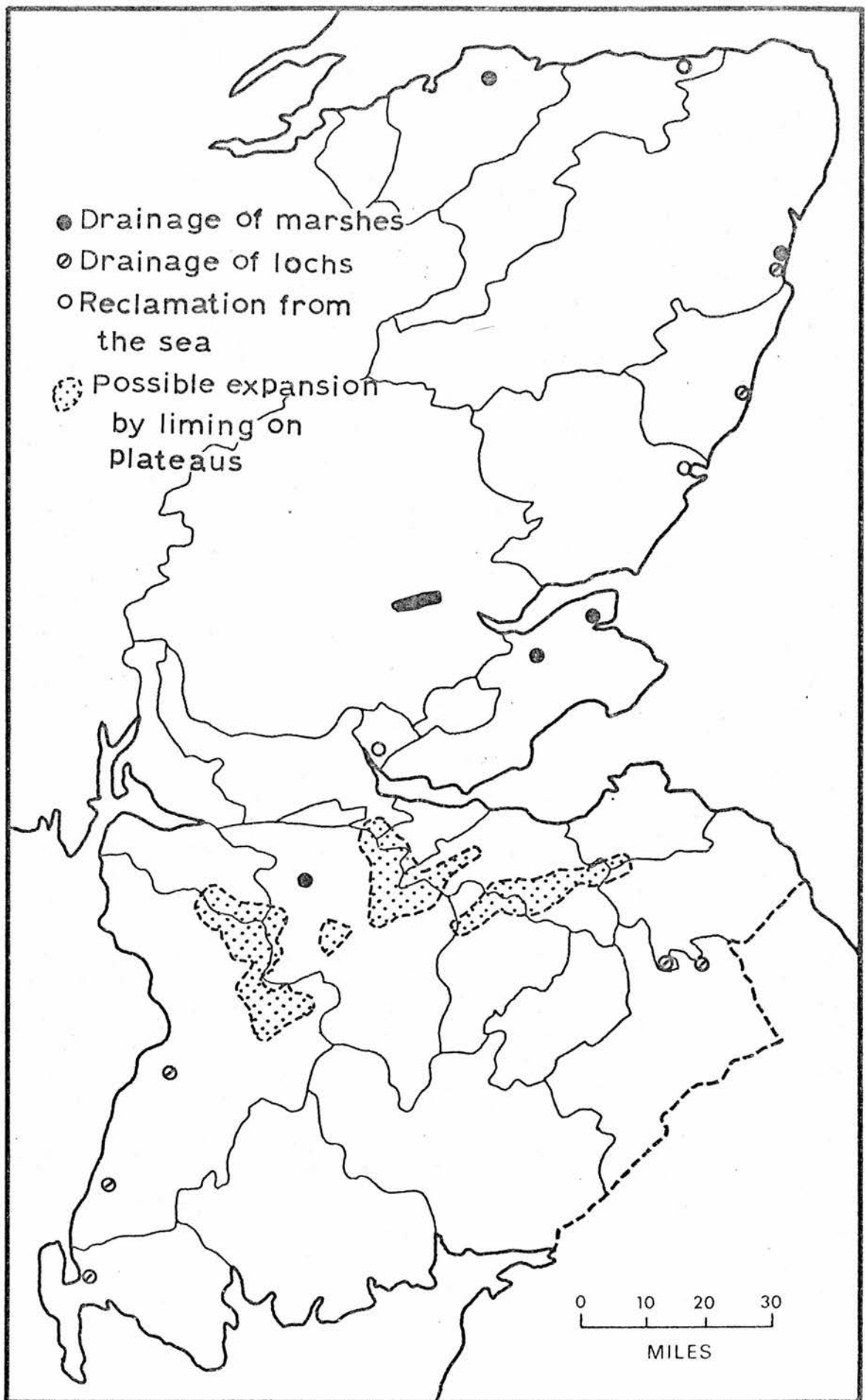
It is not suggested that the whole of the areas of plateau shown on Map 4.3 were brought under the plough. The remains of field systems on

39. Reports of 1627 *op.cit.* p.40

40. Macfarlane's Geographical Collections ed. Mitchell A. S.H.S. (1908) III p.142

41. The Coltness Collections Maitland Club (1842) p.58

MAP 4.3 EXPANSION OF THE ARABLE AREA



Auchencorth Moss suggest that, under an improved farming technology, probably in the early nineteenth century, only the better-drained slopes with a suitable exposure were cultivated. Presumably options would have been even more limited in the seventeenth century and the soils, developed for the most part upon fluvio-glacial sands and gravels, must have required considerable inputs of lime to make them suitable for continuous cropping. Recent work by Parry has highlighted the limitations imposed upon crop production at such altitudes in the Lammermuirs under both present-day and seventeenth-century conditions (42).

When Parry's work on cultivation limits in the Lammermuirs is considered in relation to the evidence for the expansion of the arable area by liming in neighbouring Midlothian, it appears that a major rationalisation process was occurring. Parry found evidence for a retreat of the upper margin of cultivation around the Lammermuirs from limits which had been attained during the high period of monastic agriculture in the eleventh and twelfth centuries (43). He attributed the reversion of arable land to pasture, and the abandonment of marginal farmsteads, to the onset of climatic deterioration (44).

This might appear to conflict with the evidence of expansion which has already been presented. However, Parry found that the early monastic expansion tended to by-pass areas of poorly-drained ground at lower levels which offered greater initial obstacles to cultivation than the freely-drained hill slopes above. The moors around Greenlaw in

42. Parry M.L. Changes in the Upper Limit of Cultivation in South East Scotland 1600-1900 Unpublished Ph.D. thesis University of Edinburgh 1973

43. Ibid. p.199

44. Ibid. pp.322-327

Berwickshire remained uncultivated until the later eighteenth century (45). These moors, at altitudes of between 700 and 900 feet, are similar in character to the plateau country which was being reclaimed in Midlothian during the seventeenth century. The difference in activity can be readily explained by variations in the ease of access to lime for reclaiming such land. In Midlothian such areas are underlain by Carboniferous strata and limestone was easily quarried locally. In Berwickshire, the bedrock of the moors was of Old Red Sandstone age. The nearest sources of lime were in Midlothian and England. Dodgshon has shown that the difficulty and expense of transporting lime into this area acted as a barrier to agricultural improvement during the seventeenth and early eighteenth centuries (46).

It is clear that while the upper margins of cultivation were retreating in the face of increasingly adverse long-term climatic conditions, an expansion was taking place on ground at middle altitudes which had been considered unsuitable for cultivation in the Medieval period. The advent of liming was the key to the reclamation of these large areas of plateau.

4.3.2 The division of commonties

One of the problems of expanding the arable area at the uphill margins of cultivation was the fact that large areas of hill pasture in Lowland Scotland were held as commonty. A distinction must be made between two classes

45. Ibid. p.214

46. Dodgshon R.A. Agricultural Change in Roxburghshire and Berwickshire 1700-1815 Unpublished Ph.D. thesis, University of Liverpool (1969) pp.241-248

of commonty. The first were owned by a single proprietor and were grazed in common by his tenants. This type should properly be termed "common pasture", but is generally referred to as "commonty" in contemporary sources. The other class comprised true commonties, where two or more proprietors and their tenants shared the rights to the use of the pasture.

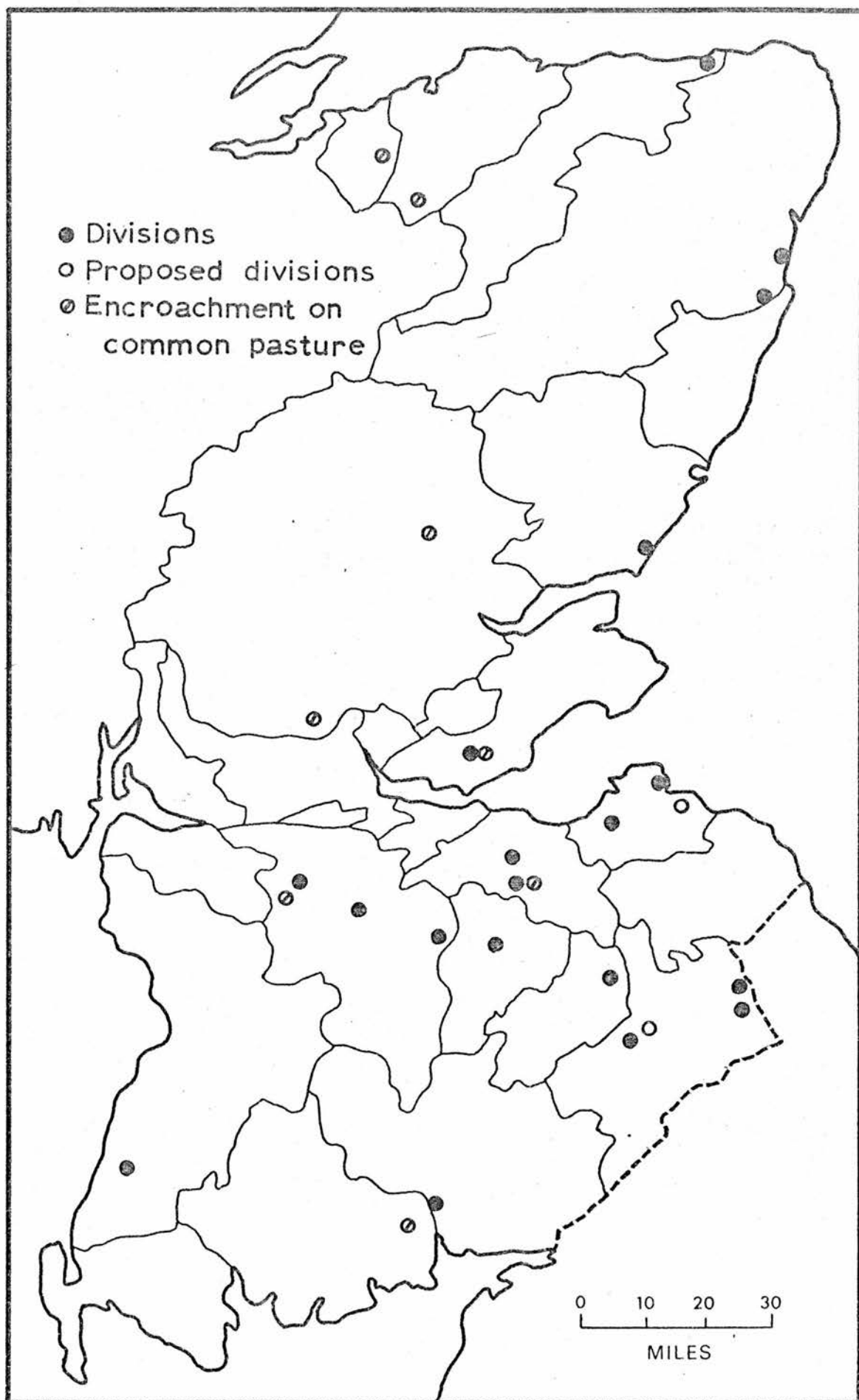
The restrictions which were placed upon the expansion of the arable area varied greatly between the two classes. In the case of the first type, all that was required to make an intake upon the commonty was the permission of the proprietor, providing that neighbouring tenants were not adversely affected. Such common pastures could also be divided whenever the proprietor desired, and the pasture distributed out among the farms which had previously used it. There are not many clear examples of this, because of the blanket use of the term "commonty". Nevertheless, references in tacks allowing tenants to take in more arable land probably relate to encroachments on, or division of, common pasture. For instance, in a tack on the Brodie of Lethen estates in Nairnshire, the tenant was granted the right to "teill, ryiff and win new lands upon any boundis be northe the greine gaitt" (47). A tenant on the Pitfodels estates near Aberdeen was leased "that part of the commontie of Wealshaw formerly riven out by Magnus Mill and now possessed by himself" (48). Possible instances of the expansion of arable on to common pasture are shown on Map 4.4.

In the case of true commonties however, the position was very

47. S.R.O. Brodie of Lethen muniments GD 247 64 (1631)

48. S.R.O. Menzies of Pitfodels muniments GD 237 250 (1683)

MAP 4.4 DIVISIONS OF COMMONTY



different. Any encroachment on the commonty by intakes of arable land prejudiced the rights of all other proprietors who had an interest in the commonty. The cultivation of arable land was regarded as an act of property which, if continued, endangered the very existence of the commonty (49). Proprietors tended to guard their rights jealously and, on most commonties, regular perambulations were conducted to ensure that the marches had not been encroached upon (50).

However, in 1647, the first limited division of commonty act was passed by the Scottish Parliament (51). This indicates that the legislature, and certain sections of the landowning classes, were changing their attitude to commonties away from the maintenance of the status quo (see Chapter 2). The act was specifically designed to facilitate the division of commonties to allow them to be converted to arable land. It was restricted to those areas - Ayrshire, Lanarkshire and the Lothians - which had access to lime for reclaiming the pasture (see Chapter 3). This act specifically links the division of commonties with a desire to convert pasture to arable by liming.

There is no definite evidence that it was ever used, as has been considered in Chapter 2. Despite this, seventeenth-century divisions of commonty by private agreement were not uncommon, particularly in the latter half of the century. Known divisions of commonty are shown on

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49. Eg. Melrose Regality Records ed. Romanes C.S. S.H.S. (1917)
 III p.9
 S.R.O. Biel muniments GD 6 567 (1643-79)
 S.R.O. Penicuik muniments GD 18 1296
50. Eg. S.R.O. Biel muniments GD 6 1771 (1602) The riding of the
 marches of the Commonty of Innerwick
 Extracts from the Records of the Burgh of Peebles 1652-1714
 Scot. Burgh Rec. Soc. (1910) p.62 (1655)
51. A.P.S. VII (1647) p.803

Map 4.4 together with divisions which were proposed but for various reasons, never executed. Table 4.3 shows the divisions arranged chronologically and it is clear that there was an increase in the number of known divisions in the later seventeenth century prior to the passing of the 1695 division of commonties act.

The growing desire to divide commonties and convert them to arable is underlined by the sweeping nature of the 1695 act (52), and echoed in the writings of Sibbald and Belhaven a few years later (53). It is far from certain that all the divisions which took place are known. Division by private agreement could be undertaken without leaving any documentary evidence, apart from chance references. Not all divisions are known to have been accompanied by an expansion of the arable area, but the 1647 act suggests that this was the major incentive behind division proceedings. Involving, as they often did, quite substantial areas of land, the contribution of the division of commonties towards the expansion of the arable area may have been a significant one.

4.3.3 Reclamation by drainage

During the seventeenth century, drainage and land reclamation was continuing steadily in the Low Countries and great advances were being made in the English Fenlands (54). The known examples of reclamation by

52. A.P.S. IX (1695) p.462

53. Sir Robert Sibbald Discourse Anent the Improvements May be Made in Scotland for Advancing the Wealth of the Kingdom (1698)
Section 2

John Hamilton, Lord Belhaven The Countrey Man's Rudiments or an Advice to the Farmers of East Lothian How to Labour their Ground (1699) p.26

54. Darby H.C. The Draining of the Fens (1940) pp.23-82

TABLE 4.3 SEVENTEENTH-CENTURY DIVISIONS OF COMMONTY

<u>Year</u>	<u>Commonty</u>	<u>County</u>
1593	Peterhead	Aberdeen
1621	Meggis Myre	Dumfries
1624	Gladsmuir	East Lothian
1644	Bellie	Aberdeen
<u>1647</u>	<u>Limited Division of Commonty Act</u>	
1659	Culter	Lanark
cl660	Cambusnethan Muir	Lanark
1665	Shieldgreen, Peebles	Peebles
1678	Hawick	Roxburgh
1678	Selkirk	Selkirk
1680	Troup	Aberdeen
1681	Drum, Belhelvie	Aberdeen
1683	Pitfodels	Aberdeen
1685	Carnwath	Lanark
<u>1695</u>	<u>Division of Commonty Act</u>	
1695	Halls	Midlothian
1697	Muiravonside	Stirling
1699	Dunbar (proposed)	East Lothian
1701	Colmonell	Ayr
1702	Turnhouse Hill	Midlothian
1702	Hassendean (proposed)	Roxburgh
1704	Hill of Fare	Kincardine
1706	Lochgelly	Fife
1706	Pentland Hills	Midlothian
1707	Grubbet and Haddonrig	Roxburgh
pre1710	Blantyre	Lanark

drainage in Lowland Scotland seem insignificant by comparison. Nevertheless, Scotland was a small and poor country whose economy was only just beginning to develop from a semi-subsistence state. Any effort at all in this direction is significant, and may be taken as another indication of the trend towards a more commercial economy.

A number of small fresh-water lochs are known to have been drained in the seventeenth century. The references to these in estate papers tend to be fortuitous and it is possible that the known examples represent only a fraction of the drainage schemes which were actually accomplished. The scale of these operations appears to have been fairly small in all cases. Possibly the largest took place at Mertoun in Berwickshire at the end of the century (55). Sir William Scott of Harden drained a loch and its surrounding marshes and converted it into meadows which produced 160 or 180 dargs of hay a year, a darg being a day's mowing by one man.

The drainage of marshes appears to have provided opportunities for reclamation on a larger scale. The two acts of Parliament concerned with the Pow of Inchaffray valley between Crieff and Perth have been discussed in Chapter 2 (56). The extent of this project, if the provisions of the statutes were carried out in full, can be judged from the estates of the proprietors involved. It must have encompassed some five miles or more of the floor of the Inchaffray valley and may have affected a belt of country perhaps half a mile in width. As has been argued in Chapter 2, the bringing of the mutual bond between the proprietors before Parliament for ratification was an unprecedented step, and it is quite possible that

55. Macfarlane's Geographical Collections ed. Mitchell A. S.H.S. (1908) III p.176

56. A.P.S. V (1641) p.522, X (1696) p.67

other schemes of a similar nature were carried out with less difficulty.

A reference among the Innes papers suggests that a drainage scheme of similar proportions had been carried out in the marshes around the estate of Leuchars, in North Fife, at the end of the seventeenth century (57). Prior to the work, the estate was described as "lying in ane profound marish invironed with bogs, mosses, lochs and inaccessible except at two or three passes" (58). Pitlair Mire, in the valley of the Eden in Fife, was likewise drained and enclosed into a park between 1649 and 1651 (59).

Reclamation from the sea is also known to have been attempted in one or two places. Some of the carselands south of Alloa were embanked against the sea in the earlier part of the seventeenth century (60). Another scheme was proposed at Banff in the 1660s (61). This appears to have involved the embanking of the hauch land and salt marshes at the mouth of the Deveron, below the town. The scheme was a failure initially. However, in 1684, renewed attempts were made and one of the baillies of the burgh contracted to build a stone and earth dyke to protect the ground and to convert it into arable land (62). This project appears to have succeeded, for there are later entries in the burgh records relating to the maintenance of the dykes (63).

Perhaps the most ambitious plan which has come to light was the

57. Forbes D. *Ane Account of the Familie of Innes* (1698) Spalding Club (1864) p.195

58. *Ibid.*

59. S.R.O. Leven muniments GD 26 522 (1649-51)

60. S.R.O. Mar and Kellie muniments GD 124 203 (1636)

61. *The Annals of Banff* ed. Cramond W. Spalding Club (1891) p.141 (1660)

62. *Ibid.* p.163 (1684)

63. *Ibid.* p.170 (1702)

one for enclosing the whole of Montrose basin and converting it into arable land. It was hoped to reclaim some 2,000 acres in this way (64). The project was actually started, some time before the late 1670s, but the dyke was destroyed in a storm and the work was never completed. Even so, the ambitiousness of this scheme suggests a certain spirit of enterprise which was far from being the one of lassitude which some writers have alleged of seventeenth-century agrarian society in Lowland Scotland.

4.3.4 The removal of peat

The expansion of the arable area by liming and the division of common-ties was a sufficiently dramatic process to attract the notice of some seventeenth-century writers. However, contemporaneous with this there was another expansion which proceeded quietly and almost unnoticed, as it had probably been doing for centuries past. This was the expansion of arable land and pasture by the removal of peat throughout Lowland Scotland.

One of the mechanisms by which this was accomplished, paring and burning, has already been considered (Chapter 3). By means of it, peat mosses could be cropped and reclaimed on a large scale by the gradual lowering of the peat surface until the buried soil profile was exhumed and prepared for cultivation. As has been mentioned, there is evidence that reclamation by this method had been carried out on a large scale in parts of the North Eastern Lowlands. This had proceeded to such an extent in places, that restrictions had to be imposed upon the practice in order to conserve supplies of peat for fuel.

However, the other means of reclaiming land, by the continual removal of peat for fuel, was probably also an effective means of extending the arable area over a long period of time. In many parts of Lowland Scotland in the seventeenth century and before, peat was the only available fuel, once woodland had been cleared and before it was practicable to import coal. The quantities of peat which were consumed in the households of proprietors were often very large. For example, on the Airlie estates at the beginning of the seventeenth century, each ploughgate in the barony of Lintrathen was required to cut and transport over 1,700 cubic feet of peat a year to the estate mansion (65). On the Abercairney estates in 1696, the eighteen tenants of Foulis supplied the proprietor with 676 cartloads of peat a year (66). The tenants themselves might well, in many cases, have been restricted in the amount of peat they could use. However, in aggregate, they must have consumed vast quantities which, over the years, would have made major inroads on the available peat resources of many parts of Lowland Scotland and would have increased the potential arable area incidentally.

The amount of peat which had been used is indicated by the increasing restrictions which were placed upon the use of peat on many estates in order to conserve the remaining supplies. Shortages appear to have become particularly acute towards the end of the seventeenth century in some areas. Map 4.5 shows that restrictions were applied on estates throughout the Central Lowlands and particularly in the North East. They took various forms, as is shown in Table 4.4. A common one was to

64. Kirk T. *Tour in Scotland* (1677) ed. Brown P.H. (1892) p.21

65. S.R.O. Airlie muniments GD 16 30 3 (1613)

66. S.R.O. Abercairney muniments GD 24 602 (1696)

MAP 4-5 SHORTAGES OF PEAT

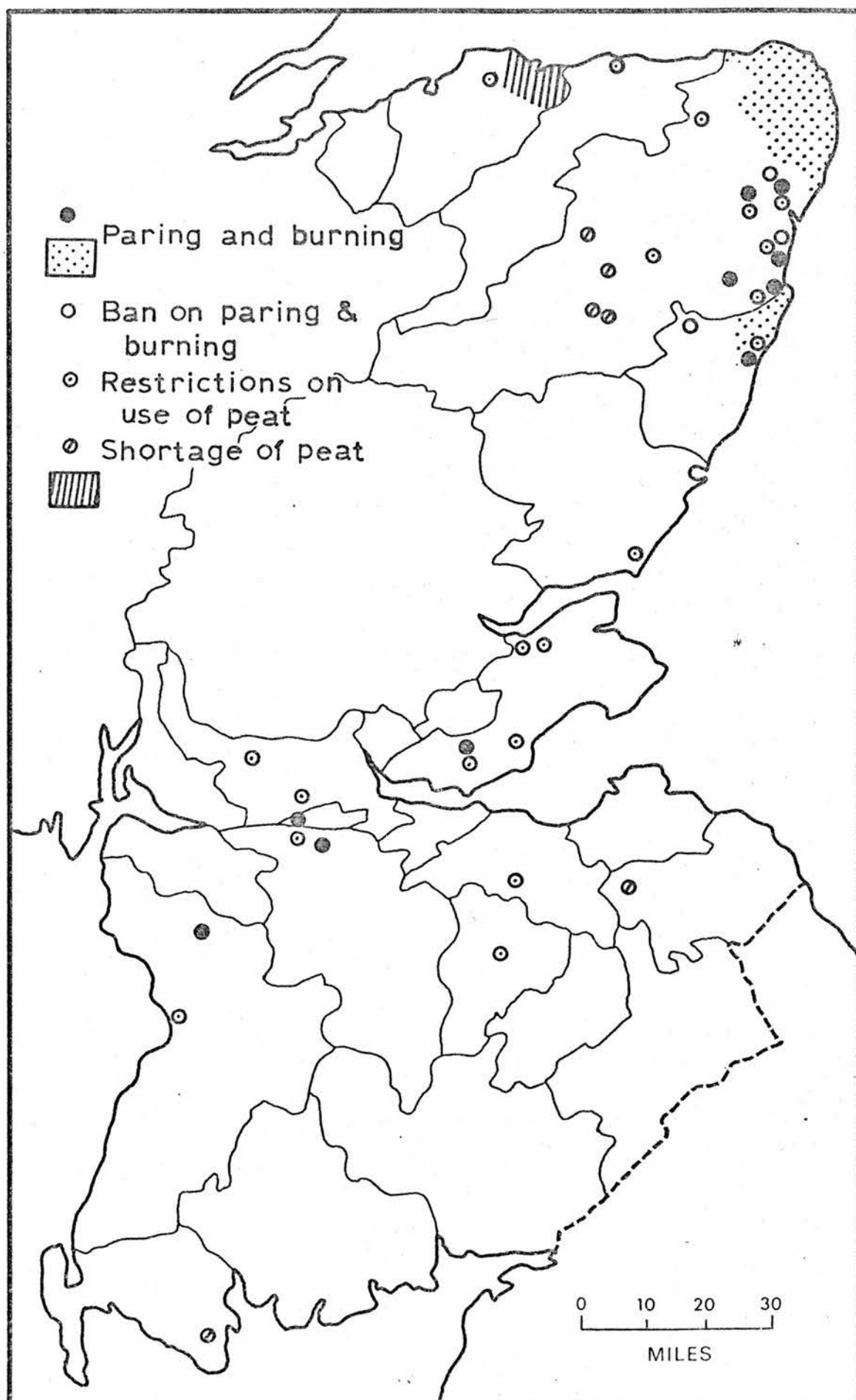


TABLE 4.4 RESTRICTIONS ON THE USE OF PEAT

Date	Estate	County	Type of restriction
1600	Monymail	Fife	Restrictions of quantity used
1612	Raith	Fife	No sale to outsiders
1630	Panmure	Angus	Restrictions on quantity used
1636	Lochgelly	Fife	Restrictions on quantity used, no sale to outsiders
1652	Elgin	Moray	No sale to outsiders
1657	Deskford	Banff	Grant of additional rights to peat in case current supplies failed
1657	Peebles	Peebles	Regulated cutting, no sale to outsiders
1662	Forbes	Aberdeen	Restrictions on quantity used, no sale to outsiders
1669	Haddo	Aberdeen	Regulated cutting
1673	Balquholly	Aberdeen	No sale to outsiders
1675	Letham	Fife	Regulated cutting
1675	Kirkintilloch	Dunbarton	No sale to outsiders
1680	Arnage	Aberdeen	Restrictions on quantity used
1687	Letham	Fife	No sale to outsiders
1693	Little Lour	Angus	Money charged to outsiders
1694	Penicuik	Midlothian	Regulated cutting
1701	Ballancleroch	Stirling	Restrictions on quantities used
1701	Panmure	Angus	Regulated cutting
1703	Penicuik	Midlothian	Restrictions on quantities used

specify limits to the quantities which tenants could cut for their own use and to forbid them to sell or give away peat to people from outside the estate (67). This appears to have been a particular problem in areas which were situated in close proximity to a burgh where the demand for fuel was great, and whose common moor was not sufficiently extensive to supply the needs of the town (68).

In some districts, peat appears to have been so worked out that the few estates which had substantial peat mosses supplied surrounding areas at a price. The Northesk estates, south of Montrose, were so short of peat by 1693 that they were forced to pay for the privilege of cutting it at Little Lour, near Forfar, a dozen miles away (69). Other estates, seeing their peat supplies dwindling, managed their remaining resources very strictly. At Panmure, the moss of Dilton was carefully divided up into sections for each tenant (70). On the Haddo estates, north of Aberdeen, tenants were required to cut back their part of the peat moss regularly with a forret or bank, instead of in random potts, or holes (71).

An attempt has been made in Map 4.5 to indicate the areas where peat is known to have been running out in the seventeenth century. These should be areas where reclamation had made significant advances by these means. The map suggests that the areas which were short of peat

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- 67. Eg. S.R.O. Dalhousie muniments GD 45 18 677 (1649-61)
S.R.O. Menzies of Pitfodels muniments GD 237 144/5 (1693)
 - 68. For example, the Urie estates near Stonehaven The Court Book
of the Barony of Urie 1604-1747 ed. Barron D.G. S.H.S.
(1892) p.27 (1618), p.85 (1667)
 - 69. S.R.O. Northesk muniments GD 130 11 (1692)
 - 70. S.R.O. Dalhousie muniments GD 45 18 761 (1701)
 - 71. S.R.O. Haddo muniments GD 33 53/48 (1669)

lay in the coastal parts of the North Eastern Lowlands and in the valleys of the Dee and Don. It has already been suggested that paring and burning may have been widespread in the North East, due to the absence of lime (Chapter 3).

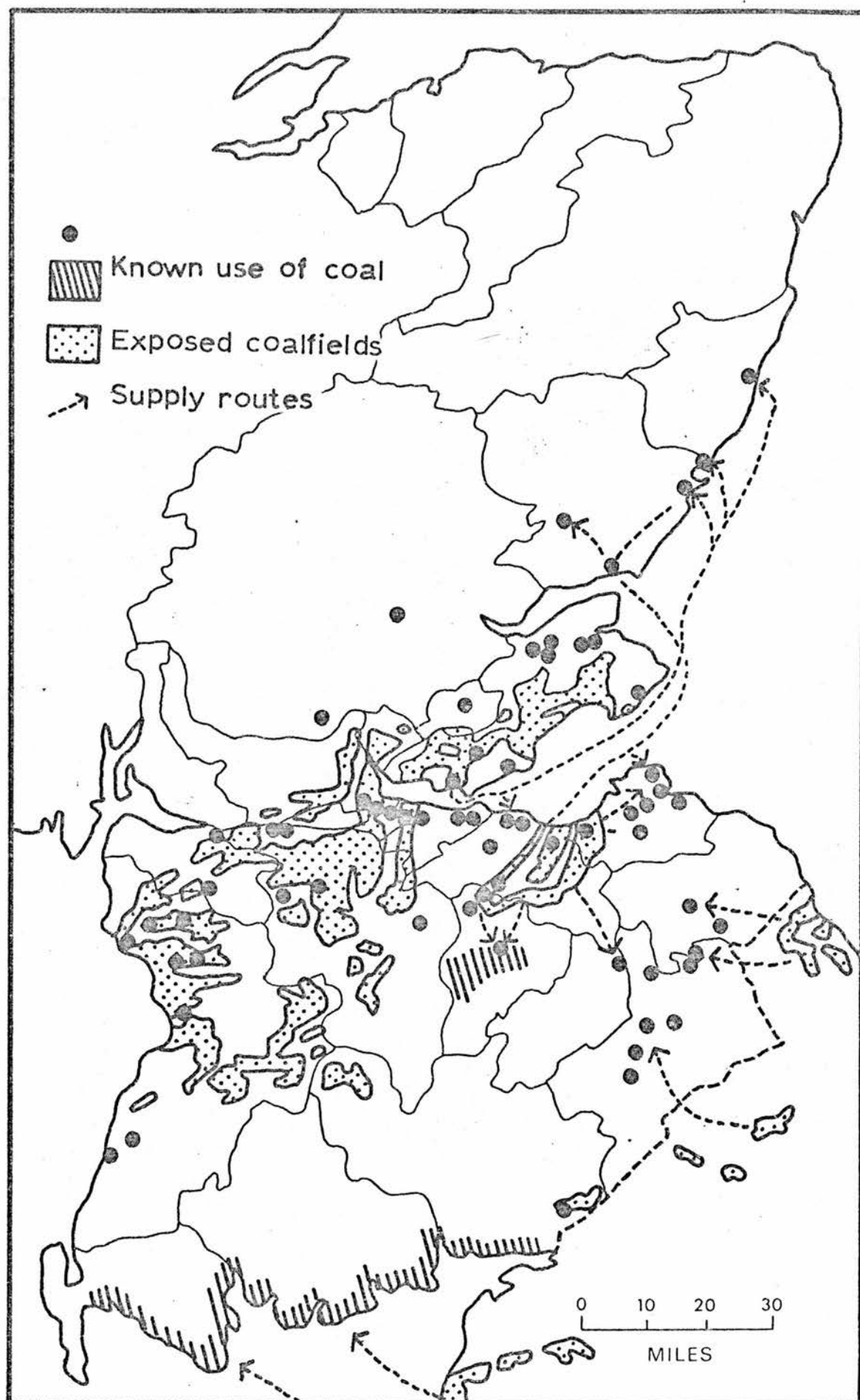
Map 4.5 implies that shortages of peat were only of scattered importance in the Central Lowlands. This would seem unlikely, since many of the largest towns, including the capital, were situated in this region and the eastern part of the Central Lowlands at least was an area of intensive arable farming. Thus, it might be expected that, due to population density and intensity of land use, shortages of peat would have been particularly acute here.

The answer may lie in the availability of coal as an alternative source of fuel. Map 4.6 shows the known distribution of its use. It can be seen that, by the end of the seventeenth century, coal was not merely in use in areas adjacent to workable coal measures. Coal was already being supplied to areas which were distant from the coalfields and a fairly complex pattern of supply routes had grown up.

It might be argued that coal was only available to a limited sector of rural society and that its utilisation as a fuel involved questions of prestige rather than necessity. It is true that the use of coal in many areas was confined to proprietors at this time, due to its higher cost. However, where it was readily accessible, its use was beginning to spread down the social scale. The growth of liming had resulted in coal becoming familiar to tenants in many areas for burning the lime, and there is evidence that it was beginning to be used by them as a fuel (72).

72. S.R.O. Boyd of Kilmarnock muniments GD 8 954 (1707)

MAP 4.6 THE KNOWN USE OF COAL



Coal was also being used increasingly by coastal burghs. The accounts for the Pitfirrane estates south of Dunfermline at the end of the seventeenth century indicate that coal was regularly shipped to Dundee, Arbroath, Montrose and Stonehaven (73). The growing use of coal may well have been substantially the result of a shortage of peat in the Central Lowlands. If this was the case, then it demonstrates that reclamation by the removal of peat had proceeded to an even greater degree in this part of Lowland Scotland than in the North East.

Due to the nature of the evidence, it is not possible to quantify the extent to which the margins of the arable area expanded during the seventeenth century. The scattered information does not allow any estimation to be made of the relative importance of each method in terms of acreage. However, it is clear that the arable area was increased by a variety of means over wide areas of Lowland Scotland during the seventeenth century.

It might be argued that the increase of grain production by the methods described above was merely the result of an extension of traditional techniques of arable farming which were practised elsewhere, and that they did not come within the scope of agrarian change. Reclamation by the removal of peat was, admittedly, a negative method. However, its continued use appears to have stimulated positive developments in the rural economy of Lowland Scotland, namely the growing change to coal. The conversion of pasture to arable by the division of commonties did not involve any technological advances. However, the rationalisation of the social organisation which lay behind the divisions

represented a substantial change in outlook from the old agricultural system, in which a lot of co-operation was involved, towards a modern commercial one. Likewise, reclamation by drainage probably did not require any new skills; however, its very existence suggests the growth of a new forward-looking approach to agriculture and a new appreciation of the returns which could be obtained from the investment of capital and labour in land.

The conversion of pasture to arable by means of liming, on the other hand, did involve the application of new techniques. Liming appears to have transformed arable farming in the best-favoured areas (see Chapter 3), as well as making a significant contribution to its development at the margins of cultivation.

It is clear then, that most of the methods by which the arable area was expanded in seventeenth-century Lowland Scotland involved the introduction of new elements into the agrarian economy. In some cases, the inputs were technological and in others organisational. Nevertheless, each contributed to the development of agriculture during this period.

CHAPTER V

THE DEVELOPMENT OF ENCLOSURE

5.1 INTRODUCTION

One of the most important aspects of the change from an open-field system to a modern one is the development of enclosure. There is a great conceptual gulf between a holding comprising a series of scattered strips in one or more open fields and a holding which is composed of a number of compact and enclosed fields. These reflect a change in attitude from a situation of mutual co-operation between neighbours to one where the initiative and drive of the individual could be freely expressed. This was one of the fundamental differences between the old agricultural system in Scotland and the one which replaced it. The development of enclosure should thus be one of the characteristics of an agrarian system which was beginning to change from a mainly subsistence-orientated outlook towards a more commercialised economy.

This chapter will examine the development of enclosure in Lowland Scotland in the seventeenth century. Because of the nature of the Scottish economy at this time, enclosure did not take place on the scale that it did in England during the same period, as will become apparent (1). In Scotland, the drive towards enclosure was closely associated with

1. Thirsk J. *The Agrarian History of England and Wales* IV (1967) pp.200-255

the changing attitudes of the proprietors. These were the only people with the capital, the freedom and the incentive to undertake such improvements.

Seventeenth-century enclosure in Scotland was related to the evolution of the country houses of the proprietors. Both these developments reflected the changing state of the country in general. It is considered that the development of enclosure in Lowland Scotland at this time cannot be studied effectively without some reference to the evolution of the Scottish country house with which it was so closely linked. It is hoped that the brief summary given below will serve to place enclosure in its proper context.

5.2 THE EVOLUTION OF THE SCOTTISH COUNTRY HOUSE IN THE SIXTEENTH AND SEVENTEENTH CENTURIES

The spread of law and order in Scotland, which is apparent from the reign of James VI onwards, influenced many aspects of Scottish life (2). One of the most significant of these effects was the change which was wrought in the character of the Scottish country house (3). This was partly related to the growth of internal stability. It was also connected with the fact that full-scale warfare, if not strictly a thing of the past until after the failure of the rebellion of 1745, was at least becoming much less frequent. During the English invasions of the 1540s and the civil wars of the later sixteenth century, there was a definite need for fortified houses of the old style in Lowland Scotland. In the seventeenth century, the only major

2. Smout T.C. A History of the Scottish People 1560-1830 (1969)
pp.99-106

3. Ibid. pp.182-183

periods of large-scale warfare were the campaigns of 1645 and the Cromwellian invasion of 1649-50.

The standard type of residence for the smaller proprietor during the sixteenth century was the tower-house, and for the larger proprietor, the baronial castle. There was no sharp distinction between the two. Many baronial castles were composite structures formed by the building of additions to a pre-existing tower-house (4), and many castles of intermediate size adopted an expanded tower-house plan (5). The common feature of both the tower-house and the baronial castle was the emphasis that was placed upon fortification at the expense of convenience and comfort.

The exigencies of defence resulted in cramped living conditions. Tower-houses were constructed on the principle of having as small a ground plan as possible exposed to direct attack. The space within some of the smaller tower-houses seems amazingly restricted (6), even allowing for the construction of ranges of outbuildings which might have been expendable in time of attack.

It is not surprising that, when signs of more lasting peace and order became evident under James VI towards the end of the sixteenth century, there should have been a tendency towards making country houses more spacious and comfortable at the expense of some of their defensive

4. For example, Traquair House R.C.A.M.Scotland Peeblesshire - An Inventory of the Ancient Monuments H.M.S.O. (1969) II p.311

5. Newark Castle for example. R.C.A.M. An Inventory of the Ancient and Historical Monuments of Selkirkshire H.M.S.O. (1957) pp.62-65

6. An internal measurement of about 18' by 21-24' was common for the smaller tower-houses of Peeblesshire, which frequently consisted only of a vault and two or three rooms above. R.C.A.M. Peeblesshire (1969) op.cit.

features. This process can be clearly seen in some of the country houses which were built at this period. It gave rise to a distinctive "Scottish Baronial" style of architecture where defence was combined with beauty in a unique combination which produced smaller castles such as Crathes (7) and Craigievar (8), and larger baronial castles like Glamis (9).

The Civil Wars again acted as a disruptive element, curtailing trends towards improvement which had begun to gather momentum in the earlier part of the century. For a brief period, the fortified house came into its own again. However, the Restoration brought with it a wave of optimism concerning the future peace and prosperity of the country. Tastes were changing; there was no longer prestige in maintaining a large body of retainers and a grim old castle in a state of perpetual readiness for foray or siege. Instead, the demand for spacious apartments, well lit and well furnished, was increasing. The result was the widespread conversion of old-style country houses and the building of a totally new type of unfortified country mansion throughout Lowland Scotland. Patrick, first Earl of Strathmore, voiced the opinion of his time when he was engaged in the conversion of his house of Glamis in 1684 -

"... and in my oun opinion when troublesome times are, it is more safe for a man to keep the feilds than to inclose himself in the walls of a house, so that there is no man more against the old fashion of tours and castles than I am. And I wish that everie man who hes such houses would reform them, for who can delight to live in his house as in a prison ..." (10)

7. McGibbon D. and Ross T. *The Castellated and Domestic Architecture of Scotland* (1887) II p.110

8. *Ibid.* p.104

Perhaps the grandest of these conversions took place at Traquair House in Peeblesshire. There the main block, which incorporated a pre-existing tower-house, was remodelled so as to appear more uniform from the outside. Two flanking service wings were constructed at right angles to the main block and the whole building enclosed within a courtyard (11). The final effect was one of elegance and symmetry blended with some of the stubborn hostility of the old fortified house. Traquair House was a product of its time, and it typified the transitional character of the seventeenth century in Scotland.

However, the piecemeal conversion of existing castles and tower-houses was only one aspect of the trend which set in after 1660. Another was the construction of totally new country houses on a classical model without any attempt at fortification; rather the accent was upon spaciousness and beauty. The achievements of Sir William Bruce at Kinross House (1686-91), Hopetoun House (1699-1702) and elsewhere are well known (12), but there were many other examples. By the end of the century, the trend had continued to such an extent that Sir Robert Sibbald could write that "the seats of the gentry are vastly increased now, and wher there was only narrow tours, now there are regular and commodious buildings with partinents" (13).

9. Ibid. p.118

10. The Glamis Book of Record 1684-1689 S.H.S. (1890) p.33

11. Dunbar J.G. The Historic Architecture of Scotland (1966) p.102

12. Dunbar J.G. (1966) op.cit. pp.96-97

13. Sir Robert Sibbald Discourse Anent the Improvements May be Made in Scotland for Advancing the Wealth of the Kingdom (1698)
NL. MS. 33 5 16 c2

5.3 THE COUNTRY HOUSE AND ITS ASSOCIATED ENCLOSURES

It must not be supposed that the old tower-houses and baronial castles stood alone and gaunt in an empty landscape any more than did the country houses which succeeded them. They were probably surrounded by ranges of outbuildings in most cases. These less enduring structures have disappeared from surviving fortified houses, but they show up clearly in excavated examples, such as the complex of buildings at Lour in Peeblesshire (14).

At an early date, the fortified house and some, if not all, of its attendant outbuildings were surrounded by an enclosure or barmkin. This was purely defensive in character and was often pierced with gun-loops, as in the example at Newark Castle in Yarrow (15). The barmkin served as an outwork of the tower into which livestock could be driven for protection. The counterparts in larger baronial castles were the inner and outer courtyards such as the sixteenth-century examples at Craigmillar, near Edinburgh (16), and Dirleton in East Lothian (17).

From a fairly early date, some of these enclosures were of a less functional nature. The fine walled garden at Edzell Castle, dating from 1604, is one of the most attractive examples (18). At Craigmillar, two gardens flanked the main block of the castle with a fishpond at the rear (19).

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14. Dunbar J.G. and Hay G.D. Excavations at Lour, Stobo P.S.A.S. 94 (1960-61) pp.196-210
 15. R.C.A.M. An Inventory of the Ancient and Historical Monuments of Selkirkshire H.M.S.O. (1957) p.62
 16. Douglas Simpson W. Craigmillar Castle H.M.S.O. (1954)
 17. Richardson J.S. Dirleton Castle H.M.S.O. (1950)
 18. Cox E.H.M. A History of Gardening in Scotland (1935) p.32

This trend was greatly extended in the seventeenth century, particularly following the Restoration. With the relaxation of the need for defence, country houses could be beautified by surrounding them with a series of enclosures containing flower and vegetable gardens, orchards, ornamental parks and planting. The laying out of extensive "policies" as they were called, frequently went hand in hand with the conversion of an existing fortified house or the building of a new one. Both the new-style country house and its policies were manifestations of the same desire to enhance the estate. The new houses and their grounds were so closely related in the minds of contemporaries that they never considered either of them in isolation. The one was designed to set off the other to the greatest possible advantage.

The late seventeenth-century trend towards the improvement of country houses and their grounds may be viewed as another example of conspicuous consumption. Prior to the seventeenth century, the principal manifestation of this had been the maintenance by landed families of large bodies of retainers. The larger the private following which a proprietor could boast, the greater was his prestige. In the troubled times before the reign of James VI there was a real need for these retainers to protect the proprietor, his property and his tenants. During the seventeenth century, the need for armed followings declined (20), and the produce which had fed them, converted into money, was channelled into the embellishment of the country house and its environs.

However, it must be remembered that the estate was an economic

19. Douglas Simpson W. (1954) *op.cit.*

20. Smout T.C. and Fenton A. *Scottish Agriculture Before the Improvers, An Exploration* Ag.H.R. 13 (1965) p.78

unit in a transitional economy at this time and that the designs of the proprietors were tending increasingly towards the making of profits.

A good deal of capital would have been needed to follow the dictates of fashion in converting a country house and laying out its policies. If the latter were to be merely ornamental, then there would be no return on the capital expenditure apart from the pleasure of admiring them. It was logical therefore, to enhance the country house by enclosing the policies in such a way that they made at least some contribution towards the economic well-being of the estate. In a relatively poor country, at a time when capital was scarce, this made hard economic sense which few proprietors, even the most wealthy, could have afforded to ignore.

It was this attempt to combine the ornamental with the utilitarian which brings the evolution of the country house and policies in Lowland Scotland during the seventeenth century within the scope of the present study. If a proprietor had the inclination and the capital, it was a small step when laying out estate policies to enclose the mains into a series of "parks", as they were called, and farm them commercially. The possession of an enclosed holding of this type, under the proprietor's own management, appears to have acted as a stimulus to agricultural improvement. Such land was free from the restrictions which were placed upon the lands of the tenants due to the need for their mutual co-operation under the old open-field system. This freedom was of fundamental importance to the development of improved agriculture in Scotland, as it encouraged a number of proprietors to experiment with new techniques of husbandry and management. The infra-structure provided by an enclosed mains allowed proprietors with advanced ideas to experiment without

committing themselves to too great a capital investment which, if it proved unsuccessful, might provoke a financial crisis in the affairs of the family concerned. The ornamental aspects of enclosure are not of great importance to the theme of this study; this chapter will concentrate on the development of experimental agriculture in the enclosures round the country houses of landowners in Lowland Scotland in the seventeenth century and attempt to assess its success and results. The most convenient way of approaching this is to discuss separately the types of land use within the enclosures. It is considered in this context, that it is impossible to separate the planting of trees from the other aspects of enclosure as "forestry". The planting of trees was an integral part of enclosure around country houses and deserves detailed consideration.

5.4 ENCLOSURES FOR PLANTING

By the beginning of the seventeenth century, Lowland Scotland was almost treeless (21). The only substantial reserves of native timber were situated in the Highlands (22). These were exploited to a limited extent where there were rivers of sufficient size and depth to float the timber down to the Lowlands (23). However, the limitations of overland transport rendered

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21. R.P.C. 1st series (1608) VIII p.543 The country was stated to be "almost naked and many yeiris ago spoiled of all the timmer within the same".
 22. The Pennyless Pilgrimage of John Taylor the Water Poet (1618) in Hume-Brown P. Early Travellers in Scotland (1891) p.123
Bishop Leslie History of Scotland in Hume-Brown P. Scotland Before 1700 (1893) p.128
 23. Timber was floated down the Tay and Loch Tummel from the woods of Rannoch, down the Dee from Glentaner and Braemar, and down the Spey from Rothiemurchus and Abernethy R.P.C. 3rd series VIII (1683) 147, S.R.O. Mar and Kellie muniments GD 124 102 (1707) and S.R.O. Gordon muniments GD 44 74

the greater part of the timber reserves in the Highlands inaccessible (24). The timber requirements of most of Lowland Scotland were met by imported timber, principally from Norway (25).

By the mid-seventeenth century, what trees there were in Lowland Scotland grew mostly in small plantations around the houses of landowners (26). The decreasing need for defence in the later sixteenth and early seventeenth centuries appears to have encouraged proprietors to plant clumps of trees around their houses for ornament and shelter. In 1677, Thomas Kirk, in an account of his travels in Scotland, made frequent reference to this. For instance, in Berwickshire he noted: "There are several pretty houses by the way and above every house a grove of trees (though not one tree elsewhere) which sets them off mightily" (27).

A large number of references in topographic descriptions and detailed estate accounts indicate that the trend towards the planting of trees around country houses, although initiated before the Restoration, increased greatly after this time. Map 5.1 shows the distribution of estates where the planting of trees on estate policies is known to have occurred. The dates of the planting are given approximately. The emphasis on the late seventeenth century is evident. The distribution itself is warped by the random nature of the evidence. The concentration in Angus relates to the fact that Auchterlony's description of the county, dated

24. Kirke T. A Modern Account of Scotland by an English Gentleman (1679) in Hume-Brown P. Early Travellers in Scotland (1891) pp.251-265

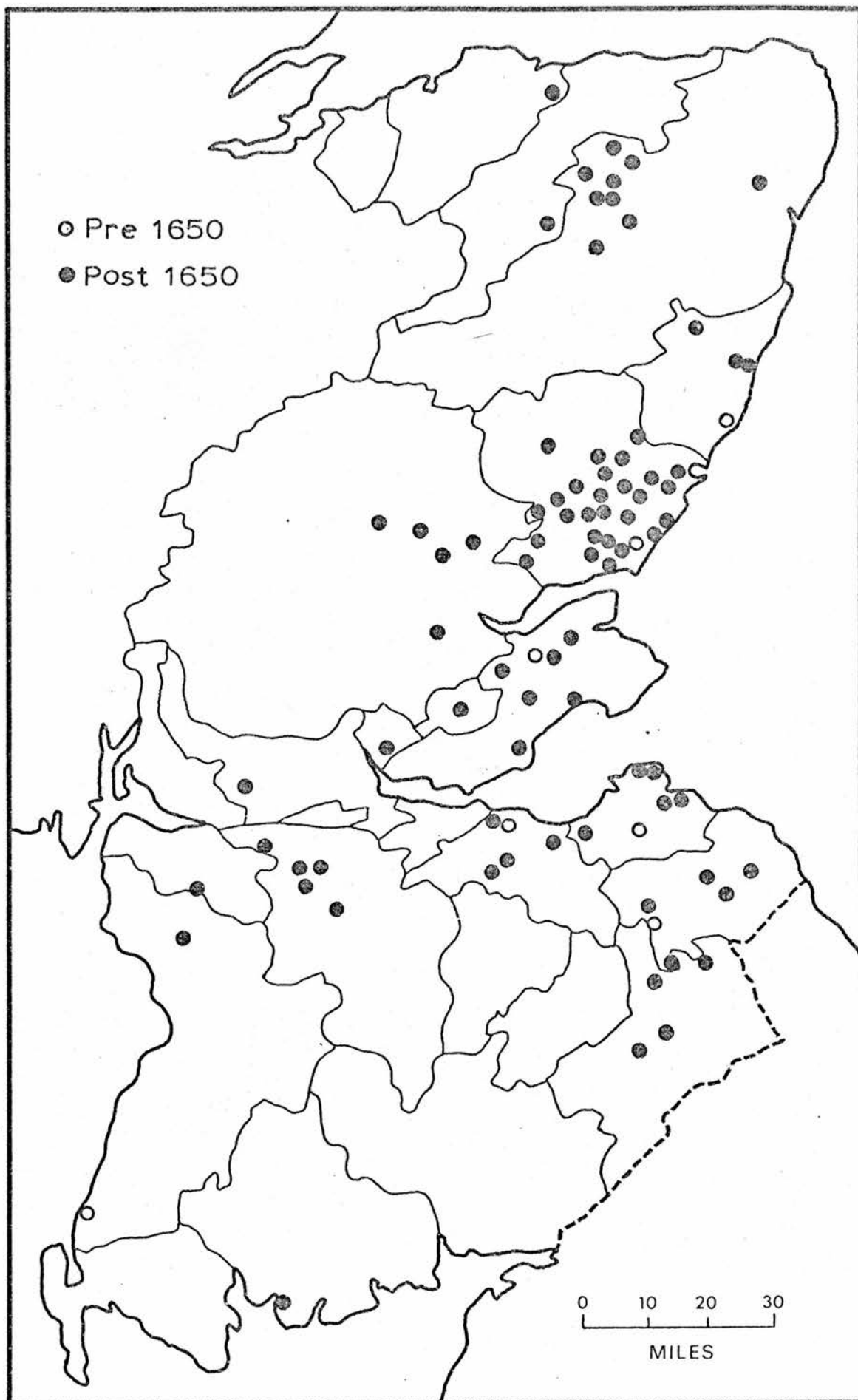
John Taylor (1618) op.cit.

25. Smout T.C. Scottish Trade on the Eve of the Union 1660-1707 (1963) pp.24, 210

26. Kirke T. Tour in Scotland (1677) ed. Hume-Brown P. (1892) pp.8, 12, 15, 17

27. Ibid. p.8

MAP 5-1 ENCLOSURES FOR PLANTING



1684, gives details of the state of virtually every country house in the shire, so that information is almost complete (28). However, the concentration in the east-coast Lowlands and the relative absence of evidence of planting in the South West may not merely relate to discrepancies in the data. The east coast was especially noted for its shortage of timber (29), and there is evidence that the South West, Lanarkshire and Dumfriesshire were still relatively well provided with remnants of natural woodland at this time (30). The incentive to undertake planting on a large scale was thus greater in the eastern Lowlands than in the west. It is significant that all known references to large-scale block planting as opposed to planting for the protection of enclosures or ornament, relate to east coast estates.

Relatively little information is available concerning the extent of such planting however. The most detailed description is for the Panmure estates in Angus, where the estate accounts indicate that a good deal of planting was being undertaken quite early in the century. For instance, in 1622 the estate's head gardener bought 1,060 young trees from Dundee to plant on the estate (31). Entries in the accounts indicate that the concern for planting began at least as early as 1612 (32). The net result of this activity can be seen in an inventory of the trees at Panmure in 1694 (33). By this time the woodland, partly in compact blocks protected by

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28. Auchterlony J. Account of the Shire of Forfar (1684-85) in Warden A.J. Angus or Forfarshire, the Land and the People (1861) II pp.252-276
29. Kirke T. (1677, 1679) op.cit.
Bishop Leslie op.cit.
Taylor J. (1618) op.cit.
30. Macfarlane's Geographical Collections S.H.S. (1907) II p.4 (1683), p.100 (1684), III p.199
31. S.R.O. Dalhousie muniments GD 45 18 6 (1622)

enclosures, partly as borders for other enclosures and as avenues, extended to 44,050 trees spread over about 128 acres, with plans for further planting. At the same time, the planting of trees within the yards of the tenants on the estate was continuing, and another inventory, dated 1697, indicates that each farmstead was surrounded with between ten and thirty trees (34). Much of the planting and construction of the associated enclosures was concurrent with the building of Panmure House, which took place from the late 1660s to the late 1670s or early 1680s (35).

As a profit-making enterprise, the planting of trees was a long-term investment. However, with the high price of timber, a series of planted parks such as those at Panmure could represent a good deal of money. The Earl of Strathmore reckoned the value of his timber at Glamis, when mature, to be in the region of £6-£12 Scots per tree, and to represent in total value a full year's rent of the estate (36). Profits on this scale tempted some proprietors to go in for block planting in a big way in the later seventeenth century. A description of the Yester estate at about 1720 mentions that the boundary walls of the planted enclosures surrounding Yester House were some eight miles in circumference and contained a million fully grown trees (37). Cox has estimated that there may have been some 6,000 acres of woodland at Yester by the end of the seventeenth century (38). Certainly, if the trees were mature in 1720 they must have been planted at the latest in the last decade of the seventeenth

32. Ibid. 18 1 (1612)

33. Ibid. 18 753 (1694)

34. Ibid. 738/4 (1703)

35. Warden A.J. (1885) *op.cit.* V p.67

36. The Glamis Book of Record *op.cit.* p.32

37. Cox E.H.M. (1935) *op.cit.* pp.48-49

38. Ibid.

century. In 1723 and 1724, topographic accounts refer to 100,000 planted fir trees at Urie in Kincardineshire (39), and to "millions of firs" planted by the Earl of Leven on Eden's Muir, south of Monimail in Fife (40).

Again, if these trees were mature, they must have been planted towards the end of the seventeenth century. The planting of trees had been undertaken prior to the late seventeenth century, but the scale of the above examples was an entirely new departure.

However, the amount of planting on the above estates was probably matched by relatively few others. The 128 acres of planting at Panmure was described by Auchterlony in 1684 as being exceptionally large compared with other estates in the county, and the policies themselves were said to be among the best in Scotland (41). It is likely therefore, that many of the estates which are shown in Map 5.1 were planting in terms of scores of acres rather than hundreds or thousands at this period.

Although planting was sometimes done in compact blocks for commercial purposes, and in avenues for ornament, trees were often planted as borders round enclosures for other purposes. This practice was encouraged by Lord Belhaven in 1699 for sheltering stock (42), and it has been suggested in Chapter 2 that the enclosure act of 1661 advocated the same practice. Planted enclosures of this type are known to have been made on many estates (43). It is probable that such planting was designed to last

39. Macfarlane's Geographical Collections I p.252

40. Ibid. p.296

41. Auchterlony J. (1684) op.cit. p.275

42. Lord Belhaven The Countrey-Man's Rudiments or An Advice to the Farmers of East Lothian How to Labour and Improve Their Ground (1699) p.23

43. Eg. S.R.O. Bargany muniments GD 109 3011 (1642)

S.R.O. Clerk of Penicuik muniments GD 18 1273 (1652)

S.R.O. Kinross muniments GD 29 393 (1706)

for as long as possible and was not intended for commercial exploitation in the same way that the compact blocks of woodland were.

The species of tree which were grown varied with the estate and the purpose for which the planting was designed. "Fir", presumably Scots Pine, was frequently planted in blocks, probably because the rapidity of its growth provided a quick return (44). However, fir timber, although satisfactory for some uses such as roof timbers, was not so much in favour as hardwoods for implements. Ploughs, harrows and other tools were made from ash wood where possible and this tree was frequently planted along with elm and plane (45). The slow-maturing oak was rarely used (46). Birch, alder, rowan and willow were frequent around enclosures with hawthorn as a hedge (47). Beech was planted on some estates (48). It was not a native tree, and although it thrived, it did not regenerate naturally under Scottish climatic and soil conditions (49). Buchan-Hepburn has suggested that its first introduction into Scotland may have been at this time (50).

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- 44. S.R.O. Mar and Kellie muniments GD 124 102 (1707)
Macfarlane's Geographical Collections I p.252, 296
 - 45. Eg. S.R.O. Stair muniments GD 135 118 (1692)
Records of the Baron Court of Stichill ed. Gunn C.B. S.H.S.
(1905) p.49
 - 46. The only instances recorded were at Bargany in Ayrshire (S.R.O. Bargany muniments GD 109 3011 (1642)) and at Lasswade in Midlothian (S.R.O. Clerk of Penicuik muniments GD 18 722 (1694))
 - 47. Eg. S.R.O. Dalhousie muniments GD 45 18 1 (1612)
The Account Book of Sir John Foulis of Ravelston 1671-1707 ed. Cornelius Hallen A.W. S.H.S. (1894) p.146
The Caldwell Papers Maitland Club (1854) p.300
 - 48. S.R.O. Dalhousie muniments GD 45 18 744 (1703)
Buchan-Hepburn G. A General View of the Agriculture and Rural Economy of East Lothian (1795) p.19
 - 49. Tansley A.G. The British Isles and their Vegetation (1953)
pp.248-249
 - 50. Buchan-Hepburn G. op.cit. p.19

This planting activity was viewed with suspicion by the tenantry. In many cases they would have cut down young trees indiscriminately if this had not been prevented. The Earl of Strathmore spoke of "a general humor in (the) commons who have a naturall aversione to all maner of planting and when young timber is sett be sure they do not faill in the night time to cutt att the root the prettiest and straightest trees for stavs or plough goads" (51). Proprietors had, however, the means of controlling this ready to hand in the form of the baron court. The punishments which Strathmore and other proprietors meted out to those who damaged their planting appears to have had some success as a deterrent. It was to be another century or so in some places before tenant farmers could be induced to undertake planting for themselves.

The extent of block planting on some estates and the early date at which it was carried out allowed the commercial management of some planted timber to begin before the end of the seventeenth century. Timber contracts are available for several estates in Lowland Scotland but in many cases it is difficult to distinguish natural from planted timber (52). Seventeenth-century woodland management has been discussed in detail in a recent thesis and it is not necessary to consider it here (53). Although natural woodlands had been managed commercially at earlier periods, the late seventeenth century saw the first attempts at the commercial management of planted woodland on a large scale.

51. Glamis Book of Record op.cit. p.41

52. Eg. S.R.O. Bargany muniments GD 109 3011 (1642)
 S.R.O. Clerk of Penicuik muniments GD 18 1273 (1652)
 S.R.O. Kinross muniments GD 29 393 (1706)

53. Lindsay J.M. The Use of Woodland in Argyllshire and Perthshire between 1650 and 1850 Unpublished Ph.D. thesis, University of Edinburgh 1974

5.5 ENCLOSURES FOR LIVESTOCK AND GRASS

Enclosures were also constructed for livestock. These probably originated from the necessity of maintaining the animals, which were paid by the tenants as part of their rents, in a good state until they were required for the household. Doubtless the animals which were received were often badly underfed and required fattening before slaughter.

Enclosures for this purpose took two forms which presumably were interchangeable. The first type of enclosure was that in which the animals were actually grazed, and the second type that from which the animals were excluded and in which crops of natural hay were grown. With more than one enclosure it would have been possible to alternate their use by folding the animals in one park for a year, and then raising a crop of natural hay enriched by the manure of the animals the following year. Alternatively, the animals could have been pastured elsewhere during the relatively short period of the year between May and the end of summer, corresponding to the traditional "haining time", when the natural hay was growing (54).

Such enclosures probably had fairly early origins compared to enclosures for other purposes. Enclosures for natural hay, known as "hainings" were constructed on the granges of monastic estates, such as those of the abbey of Coupar Angus, in pre-Reformation times (55). An enclosure

54. S.R.O. Shairp muniments GD 30 642

S.R.O. Clerk of Penicuik muniments GD 18 695 (1670)

55. Gilbert J. The Historical Geography of Strathmore and its Highland Boundary Zone 1100-1603 Unpublished Ph.D. thesis, University of Edinburgh (1954) p.110

at Branxholme Castle in Teviotdale in 1612 was large enough for 400 sheep to be grazed in it (56). It is possible that enclosures of the latter type were a development in times of peace from the barmkin round fortified houses into which livestock had been driven in times of war.

The function of a complex of enclosures for livestock and hay in serving the needs of a household is best illustrated from the Mar and Kellie muniments. The Earl of Mar's parks at Stirling in the later seventeenth century were designed to hold "as manie cowes and oxen as will serve the house for a year (i.e. 30), two years sheep (i.e. 120) ... 12 saddle horses and 30 acres of hay" (57). In this example, the parks were rigidly segregated into enclosures for livestock and natural hay, but the two were clearly closely integrated. The acreage under hay was carefully calculated so that "the beasts will be weall served wheras heretofore they have been starved" (58). Such enclosures were also used for pasturing the riding and work horses which would be necessary for any large family. The parks around Gordon Castle commonly held up to about 25 horses in the 1690s, half of them belonging to the proprietor, and the others belonging to visitors and to servants, who paid for the privilege of using the enclosures (59).

As well as being utilitarian, enclosed pasture also had an ornamental value. Well-fed cattle, sheep and horses grazing in neat enclosures would in themselves have enhanced any estate. However, on some of the larger estates special deer parks were constructed for purely ornamental

56. S.R.O. Buccleuch muniments GD 224 943 7 (1612)

57. S.R.O. Mar and Kellie muniments GD 124 15 (1668)

58. Ibid.

59. S.R.O. Gordon muniments GD 44 74 (1695)

purposes (60). At Gordon Castle the enclosures were also embellished with swans (61). The deer were sometimes fed with grain in winter (62), and apart from their enhancement of the estate policies, they provided a welcome supply of fresh venison for Lowland estates (63).

However important the aesthetic functions of such enclosures may have been, it has already been suggested that they rested on a sound commercial basis. Enclosed pasture had many advantages over open pasture which, in seventeenth-century Scotland, was frequently common. The foremost of these was that they allowed the segregation of livestock. One of the major disadvantages of commonlands was that the animals of the tenants and proprietors were grazed together, the healthy with the ailing (64). As a result, the animals interbred indiscriminately and the quality of the livestock was kept at a low level as a consequence. A proprietor could use his enclosed pasture to segregate his own livestock and to concentrate upon the breeding of improved strains.

The fact that enclosed pastures were generally on some of the best land of the estate probably resulted in the quality of the grass being higher than on most commonlands. The application of fertilizers such as lime would enhance this, as would the manure of the animals themselves. The provision of hay from other enclosures would be another factor which would tend to improve the quality of the livestock which were kept in enclosed pastures.

60. Eg. *An Account of the Familie of Innes* Spalding Club (1864) p.185

The Book of the Thanes of Cawdor Spalding Club (1859) p.335
S.R.O. Mar and Kellie muniments GD 124 15 (1668)

61. S.R.O. Gordon muniments GD 44 74 (1695)

62. *Ibid.*

63. S.R.O. Mar and Kellie muniments GD 124 15 (1668)

There are indications that the proprietors of some estates where enclosed pastures had been laid out were using them in this way, and were importing both cattle and sheep to improve the quality of their livestock. In the 1690s, the Earl of Panmure was experimenting with English cattle in his enclosures around Panmure House (65). He was also buying animals from his tenants at the same time (66). It is probable that he was crossing the smaller number of English cattle with the best of the animals which could be purchased from his tenants, after fattening the latter in his parks first (67). In some years he bought up to 100 animals from his tenants (68). The animals, whether crossbred or merely fattened, were sold to the larger burghs in the region.

Many proprietors in the South West were experimenting with the interbreeding of Irish cattle with the smaller, leaner Scottish animals. The import of livestock from Ireland was strictly controlled by the Privy Council between the Restoration and the end of the century, to protect the market for stock rearers at home (69). However, the Privy Council were sometimes prepared to grant licences to landowners to import limited numbers of Irish livestock for breeding purposes.

In 1697, Sir George Campbell of Cessnock in Ayrshire was granted a licence to import 60 cows and bulls, 36 horses and mares and 120 sheep for this purpose (70). About the same time, Lord Basil Hamilton was given

64. Adams I.H. Division of Commonty in Scotland Unpublished Ph.D. thesis, University of Edinburgh (1967) p.48

65. S.R.O. Dalhousie muniments GD 45 18 535 (1691)

66. Ibid.

67. S.R.O. Dalhousie muniments GD 45 18 535 (1691). At this time the Earl of Panmure had 19 English cattle.

68. Ibid.

69. R.P.C. 3rd series VIII (1683) p.411

70. Chambers R. Domestic Annals of Scotland (1874) III p.153

permission to import 120 cattle for breeding in the great cattle park of Baldoon near Wigtown (71). Other licences had been granted at an earlier date (72), with the provision that the proprietors concerned did not sell the animals directly to England. The restrictions on the supply of Irish cattle were such that some proprietors in the South West in the later seventeenth century were led to attempt smuggling them into the country (73).

Although on some smaller estates, enclosed pasture may have been restricted in its use to the fattening of animals for the household, many estates began to use their parks for commercial purposes. With the reduction in the number of retainers which appears to have been general throughout Lowland Scotland during the seventeenth century (74), many estates must have begun to find that they had far more animals from their tenants on their hands than could be consumed by the household. The expansion of rural marketing in the later seventeenth century encouraged some proprietors to convert the kail rents of their tenants into money payments, as will be discussed in Chapter 8. Other proprietors began to consider the possibilities of fattening surplus kail livestock in their parks and selling them. The next logical step was to buy in lean animals at low prices from the tenants, fatten them along with the kail animals and then sell them at a profit to local fleshers or to more distant markets.

In the South West of Scotland, this system developed rapidly in the period between the Restoration and the end of the century. The impetus

71. Ibid.

72. R.P.C. 3rd series IV (1675) p.416

73. R.P.C. 3rd series III (1669) p.105 In this year Sir David Dunbar was fined £200 sterling for illegally importing about 1,300 Irish cattle, and a further £130 sterling for selling some of them in England

was the proximity of the English market for live animals, which was increased after 1666 by the English act against the import of cattle from Ireland (75). One of the leaders in these developments was Sir David Dunbar. At Baldoon, just south of Wigtown, he had by 1684 constructed a cattle park on a huge scale. Symson, in his description of Galloway, estimated its dimensions to be two and a half miles in length by one and a half miles in width (76). In this enclosure he was able to graze 1,000 cattle all the year round in the mild climate of the Solway Lowlands (77). Some of the animals were purchased from neighbouring tenants and proprietors, and some were bred from Dunbar's own imported Irish cattle (78). The annual turnover of cattle was about 400, the animals being driven to England for sale (79). The practice with regard to the cattle which were bought from neighbours appears to have been to purchase the animals in summer, winter them in the park, and then drive them to England, suitably fattened, the following August or September (80). The quality of Dunbar's own breed of cattle was such that, in one instance, English magistrates took them to be illegally imported Irish cattle and had them slaughtered (81). At four or five years of age, these crossbred cattle fetched up to £72 Scots each compared with the £20 per animal which was the norm on the Panmure estates at about the same time (82).

74. Smout T.C. and Fenton A. (1965) *op.cit.* p.78

75. Thirsk J. *Seventeenth Century Agricultural and Social Change*
Ag.H.R. 18 (1970) supplement p.149

76. Symson A. *A Large Description of Galloway* (1684) in Macfarlane's
Geographical Collections S.H.S. (1908) II p.78

77. *Ibid.*

78. Symson A. (1694) *op.cit.*

79. *Ibid.*

80. *Ibid.*

81. R.P.C. 3rd series VIII (1683) p.153

Dunbar's name is frequently mentioned with regard to the development of the cattle-droving trade in Galloway. However, many of his neighbours were engaged in the same trade. Lord Bargany was also buying large numbers of cattle from his tenants and fattening them in his parks (83). The Stair family were sending 500 cattle a year to England from enclosures on their estate at Castle Kennedy near Stranraer (84). The other known examples of estates with enclosed pastures which are known to have fattened cattle for the English market are shown in Map 5.2.

The profits which could be gained from the fattening of cattle in enclosed pastures are illustrated by a series of accounts for the buying and selling of cattle on the Panmure estates. In 1691 and 1694 the mean price paid for cattle bought from the Earl's tenants to stock the parks at Panmure was £13 (85). The mean price obtained for the sale of the animals after fattening was £18 in 1691 and £20.10 in 1694 (86). The value of the animals had been increased by over a third during their stay in the parks.

England was not the only market for livestock however, nor cattle the only saleable product. The park belonging to the Buccleuch family at Branxholme, near Hawick, was used to graze the teind sheep which were collected from the estate. The sheep were sold in flocks of up to 400 to fleshers in Edinburgh (87). The Buccleuch parks at Dalkeith

82. S.R.O. Dalhousie muniments GD 45 18 535
Symson A. (1684) *op.cit.*

83. S.R.O. Bargany muniments GD 109 3220 (1675)

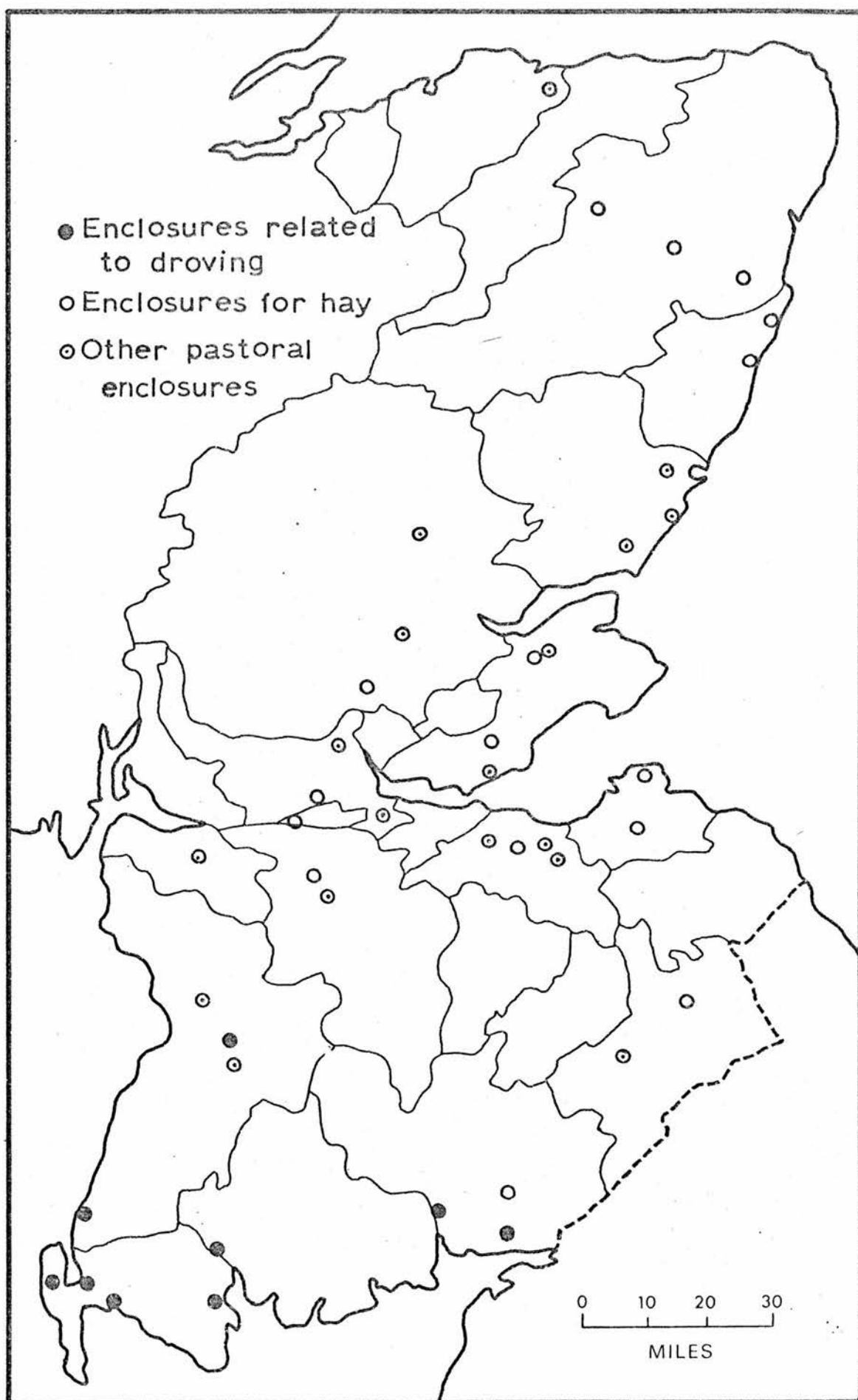
84. S.R.O. Stair muniments GD 135 33 (1701)

85. S.R.O. Dalhousie muniments GD 45 18 535 (1691-94)

86. S.R.O. Dalhousie muniments GD 45 18 535 (1691-94)

87. S.R.O. Buccleuch muniments GD 224 943 7 (1612)

MAP 5.2 ENCLOSURES FOR LIVESTOCK AND HAY



fattened cattle for sale in Edinburgh (88), and there are indications that the parks at Craigends were used in a similar way for supplying the Glasgow market (89). The Panmure estates sold their fattened animals to Dundee, Arbroath, Perth and St Andrews (90). The animals which were fed in the parks at Gordon Castle were sold to fleshers in Huntly, Turriff and other parts of the North East (91). It is not certain how far this urban-orientated market in fattened animals had developed by the end of the century. Its growth may reflect the seventeenth-century expansion of towns which will be discussed in Chapter 9.

The distribution of estates which are known to have had parks for livestock and natural hay is shown in Map 5.2. From the map it is clear that the trend towards the enclosure of pasture was widespread throughout Lowland Scotland in the late seventeenth century. The concentration in Galloway of estates which were sending animals to England is a notable one. The dates of the references indicate a strong tendency towards a development after the Restoration. The nucleus of estates in Galloway was perhaps the most important of those shown on the map, for by the end of the century the droving trade had grown to assume an important position in Scotland's export trade (92). The comparatively large scale of enclosure in Galloway in the late seventeenth century, resulted in this being the first part of Scotland in which the widespread enclosure of the lands of the tenants was undertaken fairly early in the eighteenth century (93).

88. S.R.O. Buccleuch muniments GD 224 943 18 (1660)

89. The Diary and General Expenditure Book of William Cunningham of Craigends ed. Rev. J. Dodds S.H.S. (1887) p.26

90. S.R.O. Dalhousie muniments GD 45 18 535

91. S.R.O. Gordon muniments GD 44 74 (1695)

5.6 ENCLOSURES FOR ARABLE

On a number of estates, land was enclosed in the vicinity of country houses which either continued as arable after enclosure, or was converted to arable. The distribution of known enclosures for crops associated with country houses is shown in Map 5.3. It accords broadly with the areas which are known to have concentrated on grain production: the east-coast lowlands, North Lanarkshire and Central Ayrshire (see Chapter 8).

Where land was enclosed for crops, the probability is that it was land which had been taken from the mains on estates where the home farm was not leased out to tenants but was managed directly by the proprietor. Arable enclosures around country houses were usually, though not invariably, kept as mains and cultivated with the help of the tenants' labour services (94), or by the proprietor's own servants (95). The produce of such enclosures would presumably have been used, in part at least, for the maintenance of the household.

The advantages of enclosing arable land were in part associated with the protection of the crops. Crops grown in enclosures were far more effectively guarded from damage by animals than crops grown in open fields, especially where tethering of animals on baulks and headlands was practiced. The prevalence of damage to crops by trespassing

92. Smout T.C. (1963) *op.cit.* p.213

93. Handley J.E. *Scottish Farming in the Eighteenth Century* (1953) p.100

94. S.R.O. Stair muniments GD 135 96 (1670)

95. S.R.O. Gordon muniments GD 44 72

animals in the old open-field system has been commented upon in Chapter 1 and there can be little doubt that this was in itself an important advantage. There were also positive advantages relating to the shelter which such enclosures provided. Writers on agricultural improvement, in the seventeenth century and later, considered that the shelter which was provided by a hedge or dyke, especially if backed by a border of trees, was an important factor in increasing crop yields (96). Modern studies of the microclimatic effects of shelter belts and enclosures support this (97). This was commented upon by one of the late seventeenth-century landowners who enclosed part of his mains in arable. William Cunningham of Craigends, in Renfrewshire, wrote that in 1686 the west park of the estate had been sown with oats. The crop had "lost ne'er a seed with shaking (by the wind)" on account of the protection afforded by the enclosure (98).

The extent of enclosed arable land around country houses is hard to gauge. Many of the contemporary references are incidental ones in estate accounts, relating to payments for ploughing and harvesting the parks, giving no information about their size. The arable enclosures on the Leven estates near Letham in Fife extended to at least 73 bolls sowing, which implies about 73 acres (99). The rent from the enclosed arable lands at Balcaskie, near Pittenweem, was 86 bolls of bere and 81 bolls of meal (100). If it is assumed that the rents on this estate were

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96. Eg. Sir Robert Sibbald (1698) *op.cit.* c2
 Lord Belhaven (1699) *op.cit.* p.24
 Sir John Sinclair General Report on the Agricultural State and Political Circumstances of Scotland (1814) I p.273
97. Geiger R. *The Climate Near the Ground* (1965) pp.497-504
98. *Diary of William Cunningham of Craigends op.cit.* p.26
99. S.R.O. Leven muniments GD 26 548 (1674)

about a third of the average total produce, as was common elsewhere, and that the yields of the crops were between three to one and six to one, then there may have been between 80 and 160 acres of land enclosed for arable. The arable enclosures around Panmure House, again to judge from their rental, may have extended to over 100 acres by 1673 (101). On other estates, however, the acreage of enclosed arable appears to have been much smaller. On the Boyd of Kilmarnock estates it was 38 acres (102), at Dundas, near South Queensferry, 13 acres (103), and at Craigends about 19 acres (104). These are the only examples where the size of the arable enclosures are known or can be estimated. However, the information suggests that by the end of the seventeenth century, some of the larger and wealthier estates may have had between 100 and 200 acres of arable land enclosed in this way and that many of the smaller estates had perhaps between 20 and 40 acres.

There is likewise little material relating to the crop rotations which were practised in these enclosures. The parks on the Leven estates near Lethem^a were cultivated, in the late 1670s, with a rotation including wheat, bere and oats (105). It is not clear whether the rotations involved a fallow or a legume course as did the infield rotations which are known to have been used by the tenants on parts of the Leven estates (see Chapter 3). The enclosures around Panmure House were cultivated with the same crops (106), and at Cranston, in Midlothian, a course of peas was also sown (107).

100. S.R.O. Kinross muniments GD 29 228 (1684)

101. S.R.O. Dalhousie muniments GD 45 18 480 (1673)

102. S.R.O. Boyd of Kilmarnock muniments GD 8 954 (1707)

103. S.R.O. Dundas muniments GD 75 499 (1695)

104. Diary of William Cunningham of Craigends *op.cit.* p.26

Little is known concerning the yields which were obtained on the enclosed lands. The yield of oats from the west park of Craigends was only three and a half to one, despite William Cunningham's assertion that the enclosures protected the crops from damage by wind and so increased the yield (108). Such a yield does not represent a significant improvement on the normal yield of oats from open-field lands (see Chapter 3). However, some of the accounts for the cultivation of the Mains of Lethangie, on Sir William Bruce's estate at Kinross, have survived. These give the quantities of grain sown and harvested, allowing the yields to be calculated fairly accurately. The yield of oats on the unenclosed infield land of the mains was only 2 and a half to one, while the yield of oats in the south park of Lethangie was six to one (109). This is only an isolated example however, and other factors besides the presence or absence of enclosures could have been involved.

Another possible indication of higher yields from enclosed arable land is given in the Coltness Collections. The eighteenth-century biographer of Sir Thomas Stewart of Coltness described his activities in planting and enclosing land around his country house near Wishaw in Lanarkshire into a series of parks for planting, pasture and arable in the late 1650s (110). In connection with the crop failures of the late 1690s, the biographer wrote that ...

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- 105. S.R.O. Leven muniments GD 26 532 (1672)
 - 106. S.R.O. Dalhousie muniments GD 45 18 480 (1673)
 - 107. S.R.O. Stair muniments GD 135 96 (1666)
 - 108. Diary of William Cunningham of Craigends op.cit. p.26
 - 109. S.R.O. Kinross muniments GD 29 306 (1687-93)
 - 110. Coltness Collections Maitland Club (1842) p.56

"Enduring this calamity (the crop failures and consequent famine) Sir Thomas laid out himself almost beyond his ability, in distributing to the poor ... His house and outer courts were the common resort of the poor ... and a blessing seemed defused on his little farm (that) was managed for family use (the enclosed mains) for, when all around was blasted by inclement seasons and frosts in the years 1695, 1696 and 1697, it was remarked (that) here were full and ripened crops" (111)

The prosperity of the Coltness mains during this period may have been little more than a folk-memory handed down into the following century, but it is tempting to see in it a grain of truth. It is quite feasible that the enclosed arable land suffered less violently at the hands of the elements on account of the protection offered by the hedges and trees that Stewart had planted. This may have contrasted sharply with the devastation of the unprotected crops in the surrounding open fields and so have given rise to the tradition.

So far it has been assumed that enclosed arable land was treated as infield and was cultivated in much the same way as infield land in the open-field system. This may well have been the case in a large number, perhaps a majority, of instances. However, there is some evidence that a different system of agriculture was practised in the enclosures around some country houses in the late seventeenth century. The Leven estates in Fife have already been noted for their progressive agriculture. In 1649, Pitlair Myre, south of Letham on the Leven estates, was ditched, drained and enclosed into a park (112). Two years later, cattle were

111. The Coltness Collections op.cit. p.56

being kept in it (113), yet in the 1690s, the same enclosure produced a large crop of oats (114). This alternation of pasture and arable can be seen elsewhere on the Leven estates. Whinny Park, also near Letham, was grazed by a flock of 200 sheep in 1671 (114), while in 1694, bere and oats were being sown in it (115). Again, in 1697, horses were being grazed in the park (116).

There are hints of similar practices on other estates. An early eighteenth century reference to the Panmure estates mentions the ploughing up of a grass park near Panmure House (117), and a tack of the Mains of Panmure in 1658 referred to three enclosures "presently under grass" implying that they had been under a different type of land use in the not-too-distant past (118). There are similar indirect references for the Dalrymple estates at North Berwick (119), and to the enclosures round Huntly Castle in Aberdeenshire (120). However, the most definite evidence comes from the Abercairney estates near Crieff. There, the park of Lacock was stated in 1706 to be divided into four, with three of the divisions being under grass in any year and one division under crop (121).

This is the clearest indication that a system of convertible husbandry was practised in the enclosures around some country houses in Lowland Scotland at this period. The remainder of the evidence, admittedly

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- 112. S.R.O. Leven muniments GD 26 522 (1649)
 - 113. Ibid. (1651)
 - 114. Ibid. 548 (1690)
 - 115. S.R.O. Leven muniments GD 26 548 (1694)
 - 116. Ibid. (1697)
 - 117. S.R.O. Dalhousie muniments GD 45 18 496/2
 - 118. Ibid. 366 (1658)
 - 119. S.R.O. Dalrymple muniments GD 110 798
 - 120. S.R.O. Gordon muniments GD 44 51 740
 - 121. S.R.O. Abercairney muniments GD 24 602 (1706)

fragmentary, drawn as it is from scattered references in estate accounts, supports it. This represents a totally new departure from the infield-outfield system on which it has been assumed that all Scottish arable farming was based prior to the eighteenth century (122).

Convertible husbandry was certainly known in Scotland at a fairly early date. An account by Archibald Napier of Merchiston, dated 1595 (123), describes the construction of a series of parks which were to be used for pasturing cattle for four or five years and then cropped for four years. It is uncertain whether Napier ever tried this experiment in practice, but it indicates that Scotland was not impervious to new ideas in agriculture even at the end of the sixteenth century.

Kerridge has argued forcefully that the adoption of convertible, or up-and-down husbandry in England marked the real "Agricultural Revolution" (124). Convertible husbandry had probably been practised in parts of North-West and Midland England from time immemorial. However, it underwent a rapid expansion in the later sixteenth century and the first half of the seventeenth century (125). It is tempting to suggest that the adoption of this system of husbandry on some enclosed mains land in Lowland Scotland from the middle of the seventeenth century onwards, represents a belated diffusion of ideas from England. This may have occurred as a result of closer contact between the two countries following the Union of the Crowns in 1603. This system is also known to have been

122. Handley J.E. *Scottish Farming in the Eighteenth Century* (1953) pp.37-38

123. *The New Order of Gooding and Manuring All Sorts of Field Land with Common Salt* Archibald Napier of Merchiston (1595) *Archaeologica Scotica* I (1792) p.158

124. Kerridge E. *The Agricultural Revolution* (1967)

125. *Ibid.* p.193

in use in Flanders, an area with which Scotland had strong trading links, in Schleswig-Holstein, Denmark, Alsace and parts of Northern Germany (126). However, the balance of probability suggests that, if a diffusion did in fact occur, England was the most likely source.

The benefits of such a system of husbandry over one where arable and pasture were rigidly segregated and particularly over an infield-outfield system, have been discussed by Kerridge (127) and need only be summarised here. The alternation of arable and grass reduced weeds, encouraged better grass and reduced the incidence of diseases such as foot- and liver-rot in animals. The manuring of the soil by the ploughing in of the grass sward, and the resting of the soil from cropping for a period of years, benefited both the crops and the grass.

It cannot be shown from the scattered evidence available that the estates of Lowland Scotland which experimented with convertible husbandry employed all the relatively sophisticated techniques which were in use in England (128). Nevertheless, this was a major breakthrough in attitudes towards agriculture in Scotland generally. However, the small scale of the operation must not be lost sight of. Only a few score acres of land on a fairly small number of estates were involved, in all probability. The introduction of convertible husbandry must be seen in terms of a limited experiment. Kerridge implies that there was a close association between convertible husbandry and enclosure (129). It would have been extremely difficult to introduce such a system into the agrarian economy

126. Slicher van Bath B.H. *The Agrarian History of Western Europe A.D. 500-1850* (1963) p.244

127. Kerridge E. (1967) *op.cit.* pp.206-207

128. *Ibid.* pp.193-206

129. *Ibid.* p.193

of Lowland Scotland on a large scale at this time. The initiative for change would have had to have come from the landowners, for it was only through them that the restrictive practices of the co-operative husbandry which the old system entailed could be removed. The capital which was necessary to consolidate and enclose the tenants' holdings was not generally available at this time and the expansion of commercial agriculture does not appear to have proceeded sufficiently far to have provided an incentive. Thus, the spread of convertible husbandry in Lowland Scotland in the late seventeenth century was limited to the enclosed mains of estates, and it is probable that only a small proportion of such estates took full advantage of their newly enclosed lands to give convertible husbandry a trial.

Nevertheless, even at a purely experimental level and on a small scale, the adoption of this system may have had far-reaching consequences. It had demonstrated that the growing of crops and the raising of livestock need not necessarily be irrevocably linked to the infield-outfield system and to common pasture. The link between convertible husbandry and the experiments in the breeding of improved strains of livestock on such estates as Panmure suggest that the improved quality of the pasture, which was presumably one of the results of the adoption of convertible husbandry, may have been one of the factors encouraging the improvement of livestock farming. It is unfortunate that there is no data which links convertible husbandry with the rise of cattle rearing and droving in Galloway, but it is possible that there was a connection between the two. Convertible husbandry, being a more flexible system than the co-operative open-field system which it replaced, also

encouraged experiments with crop rotations in England (130). It is possible that the first experiments with sown grasses and root crops in Scotland in the early eighteenth century were another result of the adoption of this system.

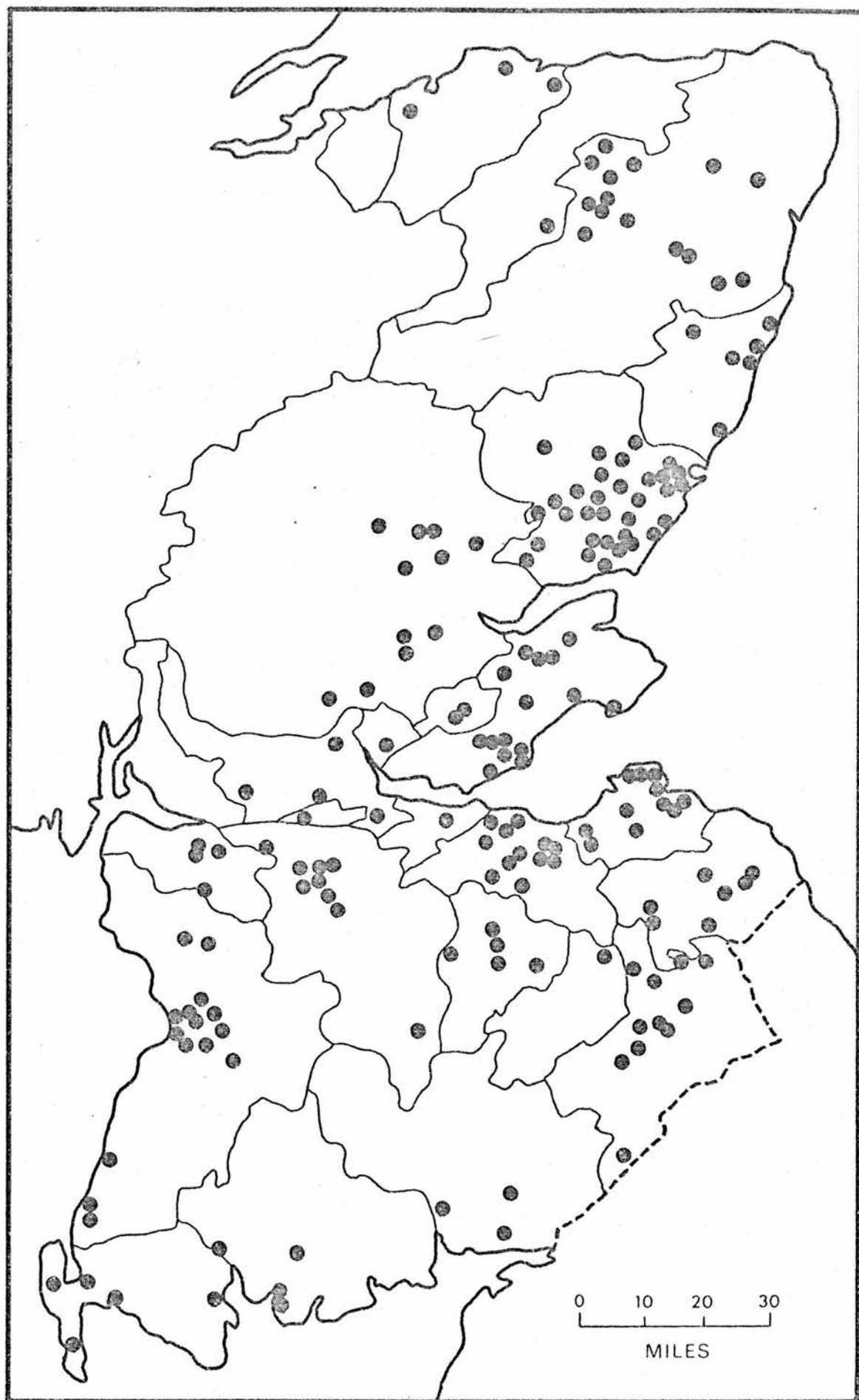
5.7 CONCLUSION

When the progress of enclosure around country houses in late seventeenth-century Lowland Scotland is considered it must be remembered that, although the various uses to which the enclosures were put have been considered individually, in practice they were closely integrated. There were, indeed, regional specialisations; for example, a concentration on enclosures for cattle in Galloway and for sheep in the Borders. The Eastern Lowlands appear to have gone in for the block planting of trees within the enclosures, and for arable parks, to a greater degree than elsewhere. However, most country houses appear to have had integrated complexes of enclosures for planting, pasture, hay and arable. Aesthetic and ornamental considerations aside, the planted enclosures and the borders of trees round other enclosures provided shelter. The straw from the arable parks provided additional fodder for the livestock to supplement the natural hay, while the livestock supplied manure to the arable parks. The integration was even closer on estates which were experimenting with convertible husbandry.

Map 5.4 illustrates the total evidence available for enclosure in Lowland Scotland in the seventeenth century. It combines Maps 5.1-5.3

130. Kerridge E. (1967) *op.cit.* p.193

MAP 5.4 ENCLOSURES OF ALL TYPES



and includes in addition a number of miscellaneous references in estate papers to enclosures whose uses were not specified. The unevenness of the distribution certainly reflects the differences in coverage from area to area. However, it shows that enclosure was taking place around country houses in every county in Lowland Scotland at this time and that the main impetus came after 1660. The term "enclosure movement" is not inapplicable to this trend as long as the scale of the operation is kept in mind.

The development of enclosure in Scotland may be considered in terms of a three-stage model in which improvement started with the country house and radiated outwards, the enclosures becoming more utilitarian and less ornamental in the process. The first enclosures were those immediately around the country house, in the form of courtyards, gardens and orchards. The role of these was mainly ornamental although they were partially utilitarian in that they might supply the household with fruit and vegetables. As has been demonstrated, enclosures of this type were common at the opening of the seventeenth century and were probably frequent at an earlier date.

The second stage was the extension of enclosure to include all or part of the mains within the policies. This trend was closely linked to the evolution of the new-style country house in Lowland Scotland. There was still some emphasis on the ornamental in the form of gardens, avenues and deer parks. However, there was an increasing trend towards commercialisation, best illustrated by the trend towards the block planting of trees and the management of enclosed pasture as a money-making enterprise. This development is seen quite early on in the seventeenth century at some places, as at Branhholme, but the main impetus did not

occur until after the Restoration. Regional variations in the agrarian economy gave rise to areal differences in the commercial orientations of the complexes of enclosures, as has been mentioned above.

The third level was the enclosure of tenants' holdings. This represented a big step from the enclosure of policies and mains. Apart from some of the Galloway enclosures which may have run to 1,000 to 2,000 acres (131), and some of the planted enclosures such as those at Yester, which ran to 6,000 acres, most complexes of enclosures probably rarely exceeded 400-500 acres (132). The difference in scale between the enclosure of a mains and even part of the lands of the tenants was a considerable one. The enclosure of the tenants' holdings required more capital than was generally available at the end of the seventeenth century, and a more sound commercial foundation for agriculture which was not provided until after the Union in 1707. Thus, the third stage was essentially an eighteenth-century phenomenon, and in many areas the process was far from complete by the time of the First Statistical Account at the end of the eighteenth century (133). However, it began quite early in the eighteenth century in areas like Galloway where enclosure had been on a fairly large scale by the end of the seventeenth century (134).

Thus the late seventeenth century enclosure movement in Scotland,

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- 131. If Symson's estimate of the extent of the park at Baldoon is approximately correct, then it must have enclosed some 2,400 acres
 - 132. The total extent of the enclosures at Panmure at the end of the century was 412 acres (S.R.O. Dalhousie muniments GD 45 18 753)
 - 133. Adams I.H. The Disappearance of Runrig in Scotland Paper read to the Institute of British Geographers, Agrarian Landscape Research Group conference, Carberry Tower, 1969
 - 134. Hamilton H. An Economic History of Scotland in the Eighteenth Century (1963) p.60

limited in extent though it was, can be viewed as part of a continuum which gradually accelerated from the late sixteenth century. There were marked increases in the rate of change following the Restoration in 1660 and towards the end of the eighteenth century (135). The developments which followed the Restoration may have been encouraged in part by the legislation which was passed by the Scottish Parliament (see Chapter 2). On the other hand, the expansion of home and foreign markets (see Chapters 8 and 9) and the increasing commercialisation of agriculture may well have provided an economic environment which was more favourable to the progress of enclosure. The developments of the later seventeenth century represent a major advance in the scale of enclosure, and behind it there can be detected a new desire to experiment with new techniques and organisation. Such ventures as the planting of trees on a commercial scale, convertible husbandry, and livestock breeding, represent the beginnings of an entirely new attitude towards agriculture. Viewed in these terms, the work of the late seventeenth-century proprietors in enclosing land around their country houses appears as an indispensable preparatory stage in the development of widespread enclosure in Lowland Scotland. The enclosure of policies and mains provided a nucleus around which the later enclosure of tenants' holdings could be planned, and on which new techniques could be tried out. The rapid expansion of enclosure in the eighteenth century appears to have eclipsed the modest but vital achievements of the late seventeenth century, but it seems that much of the foundations of this had been laid in the previous century.

135. Adams I.H. (1969) *op.cit.*

PART III

CHANGES IN AGRICULTURAL ORGANISATION

CHAPTER VI

LEASES AND TENURE

6.1 INTRODUCTION

Most of the agriculturalists in Lowland Scotland during the seventeenth century were tenant farmers. It has often been remarked that small freeholders, the yeoman class of England, did not have any real counterpart north of the Border (1). By the early years of the seventeenth century the kindly tenants, the only real equivalent of the English copyholders (2), were rapidly disappearing, either having their tenure converted into feu-ferme (3), or descending the social scale to become ordinary tenants (4). Small feuars, the bonnet lairds, occurred in most parts of Lowland Scotland (5) and were most numerous in areas such as the Tweed basin where church lands had been feued out in small parcels, rather than large blocks, in the decades before and after the Reformation (6). However, their numbers, although uncertain, were probably fairly small and their importance appears to have been insignificant in comparison with that of the tenantry.

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1. Smout T.C. *A History of the Scottish People 1560-1830* (1969) p.128
 2. Ibid. p.137
 3. Ibid. p.137 For examples of this see Melrose Regality Records ed. Romanes C.S. S.H.S. (1917) III p.395 (1607) and Fraser W. *The Lennox* (1874) II p.330 (1587)
 4. Eg. S.R.O. Lockhart of Cleghorn muniments GD237 241/5 (1618)
 5. Smout T.C. (1969) op.cit. p.128
 6. See the charters in Melrose Regality Records op.cit.

The ways in which these tenants held their lands must then assume considerable importance. Conditions of tenure exert a great influence upon the efficiency or otherwise of agriculture. It has frequently been stated that a tenant who did not hold his land by a proper written lease existed in a state of permanent insecurity. Under such conditions it has been assumed that he would not have possessed the incentive to invest in his holding (7). He would have been ill-advised to have sunk any capital into improving it for fear that he might be ejected prematurely and lose the benefit of his investment or have his rent raised. Equally, he would have been unlikely to have undertaken any extra work, such as the clearance of stones or the improvement of his farm buildings, whose benefits were long-term, when the fruits of his labour might have been passed on to a successor.

Conditions of tenure prior to, and during, the Agricultural Revolution have attracted a good deal of attention from writers on agriculture from the late eighteenth century onwards. Developments in tenurial organisation, particularly the granting of written leases for long periods of time, have been viewed as one of the most important innovations in the organisation of agriculture in Lowland Scotland (8). They were seen, moreover, as innovations which directly promoted many other improvements through giving tenants the incentive to improve their holdings by guaranteeing them security of tenure for substantial periods of time (9). Conversely,

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7. Russel J. *Reminiscences of Yarrow* (1894) p.66
Handley J.E. *Scottish Farming in the Eighteenth Century* (1953)
p.120
 8. Robertson J. *General View of the Agriculture of the Southern Districts of the County of Perth* (1794) p.120
 9. Kay G. *The Landscape of Improvement S.G.M.* 78 (1962) p.109

the relatively undeveloped state of systems of tenure before the Agricultural Revolution has been fixed upon by many writers as one of the major stumbling blocks which prevented agricultural improvement by denying the tenant any long-continued interest in the land which he worked (10).

Previous writers on the agrarian economy of Scotland before the Agricultural Revolution have made a number of sweeping assumptions concerning the ways in which tenant farmers held their land in Scotland. Most of their views appear to have been formed from an uncritical reliance upon sources such as the Board of Agriculture Reports of the early nineteenth century and the writings of agricultural improvers. These are secondary sources which are potentially biased. Hardly any authors have gone to the primary source material, the leases themselves. The result of this has been a loss of perspective and a perpetuation, with some slight modifications, of misconceptions which are over a hundred and fifty years old.

In this chapter, it is proposed to examine the evidence relating to land tenure in seventeenth-century Lowland Scotland. It is hoped to correct some initial misconceptions and then to consider the changes which took place in the position of tenant farmers during this period. These changes will then be related to other aspects of agrarian change which are considered in this thesis. Most of the information is derived from the study of known surviving leases, or "tacks". These are among the most ubiquitous of estate documents and some 2,700 of them have been identified and consulted.

10. Robertson J. (1794) *op.cit.* p.120

6.2 THE DEVELOPMENT OF WRITTEN LEASES

It has commonly been stated that, prior to the later eighteenth century, the majority of tenants did not possess written leases at all (11). They are supposed to have continued in possession of their holdings from year to year by verbal agreements with their landlords (12). It was thought that the advent of universal written leases of adequate length came during the later eighteenth century (13). Before this time it was assumed that tenants had no security of tenure and thus no incentive to invest any capital or effort in their holdings beyond what was necessary for meeting their rents and maintaining their families (14).

Dodgshon considered that written leases were essentially an eighteenth-century innovation and that prior to this, tenants had no legally recognised position (15). Whittington believed that most agriculturalists were tenants-at-will rather than holding their farms for a specific number of years (16). Donaldson, who was possibly better acquainted with the primary source material, dated the introduction of written tacks to the beginning of the seventeenth rather than the eighteenth century (17).

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11. Dodgshon R.A. Runrig in South East Scotland Paper presented to the Institute of British Geographers, Agrarian Landscape Research Group conference, Carberry Tower, 1969
 12. Whittington G. Runrig and the 'Runrig System' in Relation to Infield-Outfield Paper presented to the Institute of British Geographers Agrarian Landscape Research Group conference, Carberry Tower, 1969
 13. Dodgshon R.A. Agricultural Change in Roxburghshire and Berwickshire 1700-1815 Unpublished Ph.D. thesis, University of Liverpool (1969), p.43
 14. Dodgshon R.A. Runrig in South East Scotland (1969) op.cit.

An examination of surviving leases in collections of estate muniments supports Donaldson's theory. Scattered tacks of holdings on lay estates have survived from the sixteenth century (18), and there are even a few for the fifteenth century (19). These are very rare however. The rental book of the Cistercian abbey of Coupar Angus indicates that a large proportion of the tenants had written leases in the first half of the sixteenth century (20). This may have been a common feature of tenancy on monastic estates, which were noted for their progressive approach to agriculture (21). However, such organisation does not appear to have survived the disruptions of the Reformation (22). Written leases appear to have been very much the exception on lay estates in the second half of the sixteenth century. There are, however, clear indications of a substantial increase in the number of written tacks in the first decades of the seventeenth century.

The missing data problem arises here. It is difficult to assess just how representative the surviving tacks are, either for individual estates or in aggregate. In some collections, tacks make up a large proportion of the surviving estate papers. However, even in these cases it is never

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15. Dodgshon R.A. Runrig in South East Scotland (1969) op.cit.
 16. Whittington G. Runrig and the 'Runrig System' (1969) op.cit.
 17. Donaldson G. Scotland, James V - James VII Volume III of the Edinburgh History of Scotland (1965) p.239
 18. Eg. S.R.O. Morton muniments GD 150 2011-2013
S.R.O. Dundas muniments GD 75 454
 19. S.R.O. Dundas muniments GD 75 454
S.R.O. Makgill muniments GD 82 8
 20. The Rental Book of the Cistercian Abbey of Coupar Angus ed. Rogers C. Grampian Club (1880)
 21. Bedford Franklin T. A History of Scottish Farming (1953) c3-6
 22. For instance, written tacks do not appear to have been granted at the opening of the seventeenth century on those parts of the Airlie estates which had been acquired from the abbey of Coupar Angus following the Reformation.

possible to show, by a comparison with rentals, that every tenant on the estate at a particular time possessed a written lease. The difficulty arises in deciding whether other leases were once extant and have since been lost, imparting a potential bias to the surviving data. The alternative, that all tenants for whom written leases have not survived held their land by verbal agreements, can rarely be proved. In cases where very few leases have survived for particular estates, the problem is more acute as the bias of the surviving documents may be even greater. Here, the problem is to decide whether verbal agreements were standard and the surviving tacks were an exception, or whether large numbers of written leases have been destroyed.

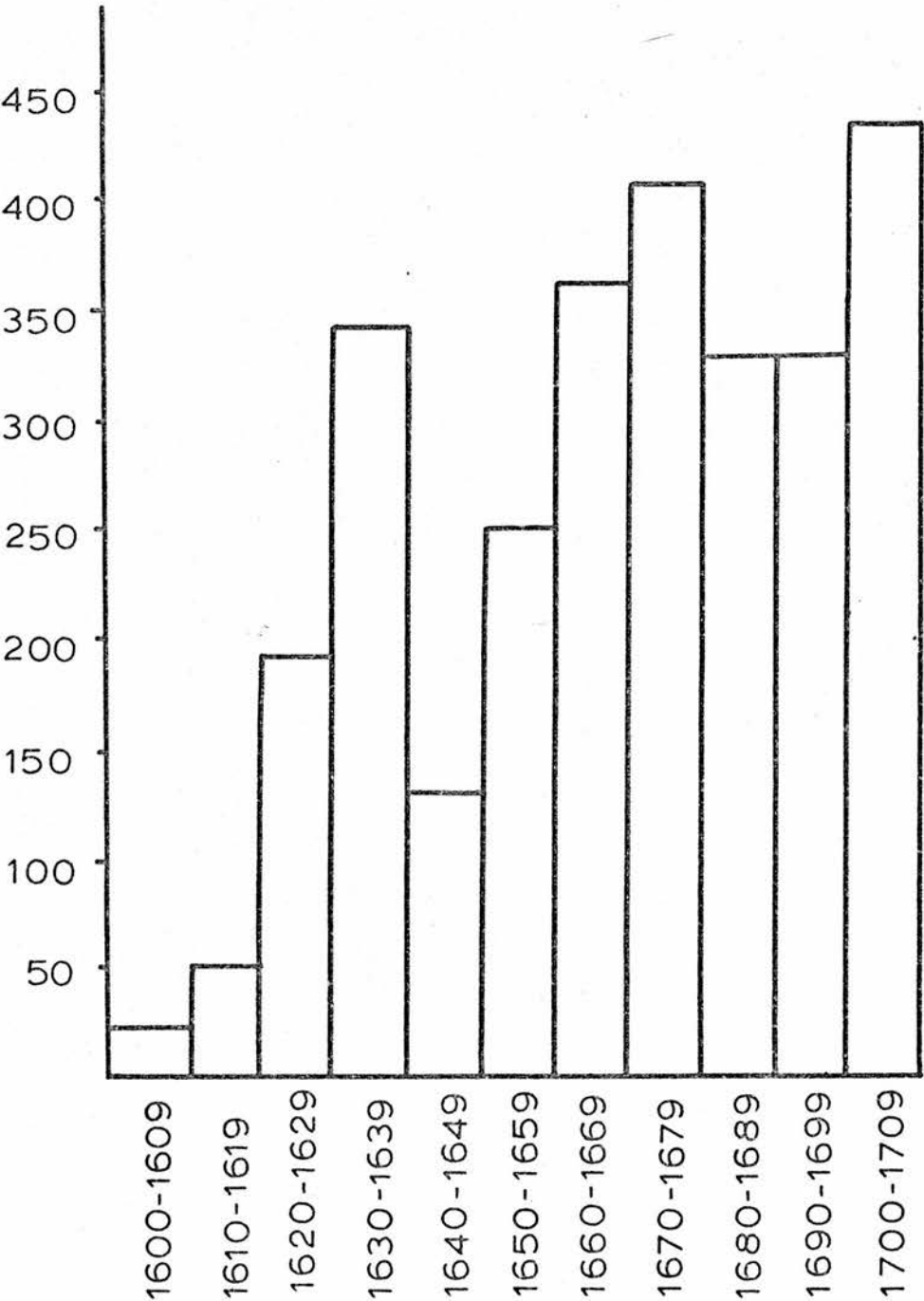
These questions can be answered in part. Although leases were formal legal documents, they did not have the same survival value as charters or sasines. Such documents might have had to have been consulted in disputes over property or succession a century or more after the date at which they were granted. Because of this, they tended to be carefully preserved. Tacks, on the other hand, were of comparatively little value once the period of the lease had elapsed, and there was little to be gained from keeping them after this. This is reflected in the fact that while charters were generally written upon parchment, leases were almost always written upon less enduring paper and have often suffered badly from the effects of time as a result. The survival of tacks might thus be expected to have been more a matter of chance than was the case with other documents relating to property. It is significant that tacks tend to survive in direct proportion to other categories of estate documents such as accounts and rentals. These ideas are supported by evidence for the

former existence of written tacks which have not survived. It was the practice in some rentals, as will be considered below, to record the length of the lease which the various tenants held and also whether they had written or verbal tacks. In many cases where this has occurred, few or none of the corresponding written tacks have survived. This indicates that the absence of leases in collections of estate papers can in many cases be related to processes of chance destruction. It need not necessarily ^{imply} infer that the number of written leases granted by an estate at a particular time was small.

The problem of the representativeness of the surviving data cannot be entirely resolved. The 2,700 leases which are studied here have been drawn from some sixty collections of private muniments, some of which embrace more than one estate. It is hoped that with such a broad spectrum of data, any small-scale bias from particular estates will be compensated for and that the sample will approximate to a random one. All generalisations in this chapter have been based on this assumption.

The numbers of written tacks which are known to have survived for each decade of the seventeenth century are shown in Fig 6.1. It can be seen that surviving written tacks are rare for the first two decades of the seventeenth century but that the number increases dramatically in the 1620s and 1630s. There is a drastic decline in the 1640s and only a partial recovery in the 1650s. This fall was probably connected with the general instability of society which resulted from the Civil Wars. During this period it might not have been in the interests of either landlord or tenant, in many areas, to be bound by a written tack for a specific period. The accounts for the Castlemilk estates, for instance, show that

FIG. 6.1 NUMBERS OF WRITTEN TACKS SURVIVING PER DECADE.



agriculture was totally disrupted on more than one occasion between 1640 and 1650, with tenants abandoning their holdings at the approach of armies (23). In such situations, security of tenure would hardly have been the most pressing consideration of the tenantry. It is significant that the increase in the number of tacks in the 1650s occurred mostly in the latter part of the decade when Scotland, under the Cromwellian administration, was peaceful once more, if not exactly prosperous. The number of tacks shows a steady increase from then to the 1670s. The fall-off during the 1680s cannot be adequately explained at present in terms of trends which are known to have been operating in the agrarian economy at this time. It shows up in a large number of estate collections and cannot be related to chance destruction in one or two large collections of muniments. The lower number of tacks during the 1690s must be due, in part at least, to the disruptive effects of the harvest failures and famines of the latter part of the decade.

If allowances are made for relatively minor inconsistencies caused by the survival of tacks being not quite random, then the graph may be taken as giving a rough indication of the relative numbers of written leases which were granted in each decade. It shows a pattern which is reflected by other aspects of agrarian change in Lowland Scotland, such as the expansion of the grain trade (see Chapter 9). The pattern is one of accelerating development in the 1620s and 1630s. This period of growth was checked by the troubles of the Civil Wars and the Cromwellian

23. NL. MS. 8218 The tenants were harassed by Montrose in 1645, and in 1648 were recorded as having fled when troops were quartered on their lands. In 1650 they are described as packing up in readiness to remove from the path of Cromwell's army

occupation in the middle of the century. Progress resumed in the decades following the Restoration, and a fairly steady rate of growth was maintained into the early eighteenth century, with a temporary setback during the economic crisis caused by the famines of the late 1690s.

Although Fig 6.1 indicates a growth in the number of written leases which were being granted during the course of the seventeenth century, it does not provide any indication of their importance relative to verbal agreements. Some information concerning this can be gained from rentals which specify the character of the tenure of the tenants. This allows the proportion of tenants who were in possession of written leases on particular estates to be calculated. Unfortunately, such rentals are rare and only six are known to exist for Lowland Scotland. The proportion of tenants who are recorded in these rentals as having possessed written tacks is shown in Table 6.1. It can be seen that in four out of the five

TABLE 6.1 PERCENTAGE OF TENANTS WITH WRITTEN TACKS ON CERTAIN ESTATES

<u>Estate</u>	<u>County</u>	<u>Date</u>	<u>% with written tacks</u>	<u>% with verbal tacks</u>	<u>Not known</u>
Crawford	Lanark	1638	48	35	17
Penicuik	Midlothian	1680	80	20	0
Hailes	E.Loathian	1682	55	45	0
Strathbran	Perth	1701	33	67	0
Balquholly	Aberdeen	1705	70	17	13
Fyvie	Aberdeen	1705	62	36	2

rentals which date from the late seventeenth or early eighteenth centuries, tenants with written tacks outnumbered those without. In some cases they were in a very large majority. The exception to this is the Strathbran rental (24). Strathbran was a remote estate on the fringe of the Perthshire Highlands. Such areas tended to be backward in the reorganisation of the structure of agriculture. They were slow to divide up runrig and to consolidate holdings in the seventeenth and early eighteenth centuries (see Chapter 7), and were equally slow to adopt written tacks or long leases (25), as will be considered below. The rental for Crawford (26) indicates that written tacks were becoming common in parts of the Borders at quite an early date. Any conclusions based on such a small sample must be tentative, but it suggests that by the end of the seventeenth century, tenants with written tacks must have outnumbered those holding their land by verbal agreements on many estates in Lowland Scotland.

The evidence of two of the above rentals supports the theory that written leases were gaining ground over verbal agreements in the later seventeenth century. On the Penicuik estates, which have been noted elsewhere for their progressive attitude towards agriculture (Chapter 8), 71% of the holdings set by verbal leases in the 1680 rental were held with written tacks by the end of the century (27). A similar process was operating in the barony of Fyvie. There, 62% of the tenants who held by verbal agreements in 1705 were recorded as being obliged to take a written tack in the near future (28).

24. S.R.O. Abercairney muniments GD 24 763

25. Robertson J. (1794) *op.cit.* pp.57-59, 117, 120

26. S.R.O. Hamilton muniments GD 237 201

27. S.R.O. Penicuik muniments GD 18 708

28. S.R.O. Yester muniments GD 28 2273

Nevertheless, it must be admitted that while developments of this kind may have been widespread, they were not universal. Some estates had not even begun to adopt written leases by the end of the seventeenth century. Notable in this category were the Buccleuch estates. There, the tenants held their lands on a year-to-year basis (29), with the holdings being re-allocated at an annual meeting of the tenants and chamberlains (30). This system continued to operate as late as the nineteenth century (31). Although continuity of tenure was assured in practice for most tenants by the paternalistic attitude of the proprietors, the system was described as a considerable barrier to agricultural improvement (32).

Having considered the evidence for increases in the number of written tacks which were granted throughout the seventeenth century, it is now appropriate to consider the advantages of such leases over purely verbal agreements. The principal advantage of the written lease was that the respective positions and mutual obligations of both proprietor and tenant were clearly stated in a form which was legally binding. The tenant possessed complete security of tenure for the duration of the lease provided that he complied with its provisions. Verbal tacks appear in some cases to have been granted for a specific number of years, rather than continuing from year to year at the will of the proprietor (33). Presumably such agreements were made in the presence of witnesses who could have been called upon in the event of a dispute. However, a lease of this type

29. S.R.O. Buccleuch muniments GD 224 935/2

30. Ibid.

31. Russel J. (1894) *op.cit.* p.66

32. Ibid.

33. S.R.O. Yester muniments GD 24 2273 (1705)

S.R.O. Penicuik muniments GD 18 708 (1680)

was clearly unsatisfactory in comparison to a written tack and could not have conferred the same degree of security. A tenant who farmed on a year-to-year basis would have been in a substantially worse position and could never have been entirely certain that he might not be evicted at short notice.

Once a tenant had been entered into a holding by means of a written tack, he could only be removed from it before the expiry of the lease if he failed to comply with the conditions of tenure which were set down in it. Even then, the legal processes which were involved were complex and protracted (34). If he infringed any of the conditions of his tenancy through his own incompetence, then he had only himself to blame. An exception to this might have been where a tenant had taken a tack on terms which were disadvantageous to him. This appears to have occurred in situations where a tenant was sufficiently desperate to take on a particular holding that he was prepared to offer a higher rent for it than was practicable (35). Even where a tenant fell behind with his rent, he might not have forfeited his tack (36). This would have applied particularly if the arrears were due to a succession of bad harvests rather than the tenant's poor husbandry. In such cases it appears to have been a standard practice to continue the tenant in possession of the holding and even to renew his tack. The principle behind this was that if the tenant

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34. Eg. S.R.O. Biel muniments GD 6 1472 (1633), 772 (1645)
Melrose Regality Records ed. Romanes C.S. S.H.S. (1917)
III p.11
35. Eg. S.R.O. Leven muniments GD 26 5 625 (1678)
S.R.O. Biel muniments GD 6 1697 (1682)
S.R.O. Bargany muniments GD 109 3487 (1704)
36. Eg. S.R.O. Penicuik muniments GD 18 1193 (1681-98)
S.R.O. Buccleuch muniments GD 224 935 3 (1697)

remained on his holding he might, after two or three good seasons, be able to pay off at least part of his debt. If, on the other hand, he was evicted, then the proprietor stood to gain nothing beyond the value of the tenant's moveable property and growing crops which might offset only a fraction of the debt.

A tenant holding by a written lease also had his rent fixed for the duration of the tack. Particularly in the case of long leases, this freed the tenant from the fear that his rent might be increased if he made any improvements to his holding. He might, however, have had to engage in some shrewd bargaining at the outset in order to get the lease at a suitable rent. The practice of "rouping" holdings, or granting them to the tenant who offered the highest rent, was common and frequently led to tenants over-estimating their ability to make a holding pay (37). This certainly promoted competition for the possession of holdings and may have encouraged tenants to work hard and to improve their farming practices, if only to pay off the high rent which they had optimistically offered. Unfortunately, it often had the effect of putting off steady, reliable men who realised that the rent that they were being forced to offer was uneconomic (38).

One of the most significant aspects of the written lease was the almost universal penalty clause which bound both proprietor and tenant to pay a fine if either party should fail to meet the provisions of the tack (39). On the proprietor's part this generally covered such obligations as the furnishing of roof timbers, and sometimes other building materials,

37. Andrew Fletcher of Saltoun Two Discourses Concerning the Affairs of Scotland (1698) Second Discourse p.35

38. S.R.O. Bargany muniments GD 109 3420 (1699)

to the tenant's house and outbuildings (40). This clause emphasised the mutual obligations inherent in the contract, although no instance has yet come to light of a tenant prosecuting his landlord for failing to comply with the conditions of the lease.

The written tack was a formal legal document which appears to have assumed a more or less standardised layout by the beginning of the seventeenth century, if not earlier. This format survived, without fundamental changes, into the eighteenth and nineteenth centuries. Some seventeenth-century tacks, particularly of smallholdings, were slipshod documents hurriedly drafted on scraps of paper, but the majority of them conformed to the same basic pattern. Fig 6.2 shows the generalised contents of a typical seventeenth-century lease.

The detailed content of the tack, particularly the type of clauses which were inserted towards the end of the document, tended to be characteristic of particular estates and proprietors. Tacks on arable estates were frequently concerned with the regulation of crop rotations and the provision of fertilizers such as lime (41). Tacks on farms bordering the Highlands often contained clauses relating to the use of shieling grounds (42). The principal change which can be detected in the character

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- 39. Eg. S.R.O. Airlie muniments GD 16 28 254 (1706)
 S.R.O. Ailsa muniments GD 25 9 73
 S.R.O. Leven muniments GD 26 5 42 (1674)
 - 40. Eg. S.R.O. Airlie muniments GD 16 28 133 (1677)
 S.R.O. Shairp muniments GD 30 640 (1664)
 S.R.O. Haystoun muniments GD 34 441 (1696)
 - 41. Eg. S.R.O. Leven muniments GD 26 5 56
 S.R.O. Gordon muniments GD 44 20 18 (1704)
 S.R.O. Haddo muniments GD 33 58/61 (1674)
 - 42. Eg. S.R.O. Airlie muniments GD 16 28 190 (1696)
 S.R.O. Gordon muniments GD 44 18 1 (1680)
 S.R.O. Dalguise muniments GD 38 454 (1699)

FIG 6.2 THE FORMAT OF A TYPICAL SEVENTEENTH-CENTURY LEASE

Date and place of writing
 Names of proprietor and tenant
 Parts and pertinents belonging to it
 (often formalised)
 Rights to peat cutting, shielings or commonty
 Length of lease
 Clauses for termination of lease for arrears
 Proprietor's guarantee to uphold lease
 Principal rent
 Penalties for non-payment
 Kain rents, ariage and carriage services
 Teinds
 Miscellaneous clauses relating to:
 Cropping
 Fertilizers
 Steelbow straw etc.
 Thirlage and mill services
 Maintenance of buildings
 Payment of public taxation
 Attendance at Baron Court
 Removal from holding
 Penalty clause binding on both parties
 Record of intent to register tack in Books of Council
 Signatures and witnesses

of tacks throughout the seventeenth century is a tendency for them to become longer and more explicit. This left fewer loopholes for accidental or deliberate misunderstanding on the part of the tenant. For instance, earlier tacks tended not to specify the services which were due from the tenant, leaving them under the vague term of "use and wont". Evidence from court books concerning disputes over the exact nature of the services which were covered by this term indicate that its use was not entirely satisfactory (43). Later tacks increasingly detailed the exact number of carriages and days to be spent in ploughing, harrowing or harvesting, which were required from the tenant (44).

6.3 LENGTH OF LEASES

Previous writers have stated almost without exception that prior to the middle of the eighteenth century, and later in many areas, all leases, whether written or verbal, were issued for short periods only. Smout considered that those agriculturalists who were not tenants-at-will held their land with leases of six years duration or less (45). Hamilton thought that the great majority of tenants possessed tacks of five years or less in length (46), and Handley concurred with this view (47). Only

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43. Eg. Extracts from the Court Book of the Barony of Leys 1621-1674
 Spalding Club Miscellany (1852) V p.222 (1621)
 S.R.O. Leven muniments GD 26 2 2 (1657)
 The Forbes Baron Court Book Misc. S.H.S. III (1919) pp.225, 311
44. Eg. S.R.O. Airlie muniments GD 16 28 256 (1706)
 S.R.O. Broughton muniments GD 10 998 (1699)
 S.R.O. Boyd muniments GD 8 927 (1691)
45. Smout T.C. (1969) op.cit. p.137
46. Hamilton H. An Economic History of Scotland in the Eighteenth Century (1963) p.51
47. Handley J.E. (1953) op.cit. p.85

Third claimed that, at the start of the eighteenth century, a few fortunate tenants possessed nineteen-year tacks (48).

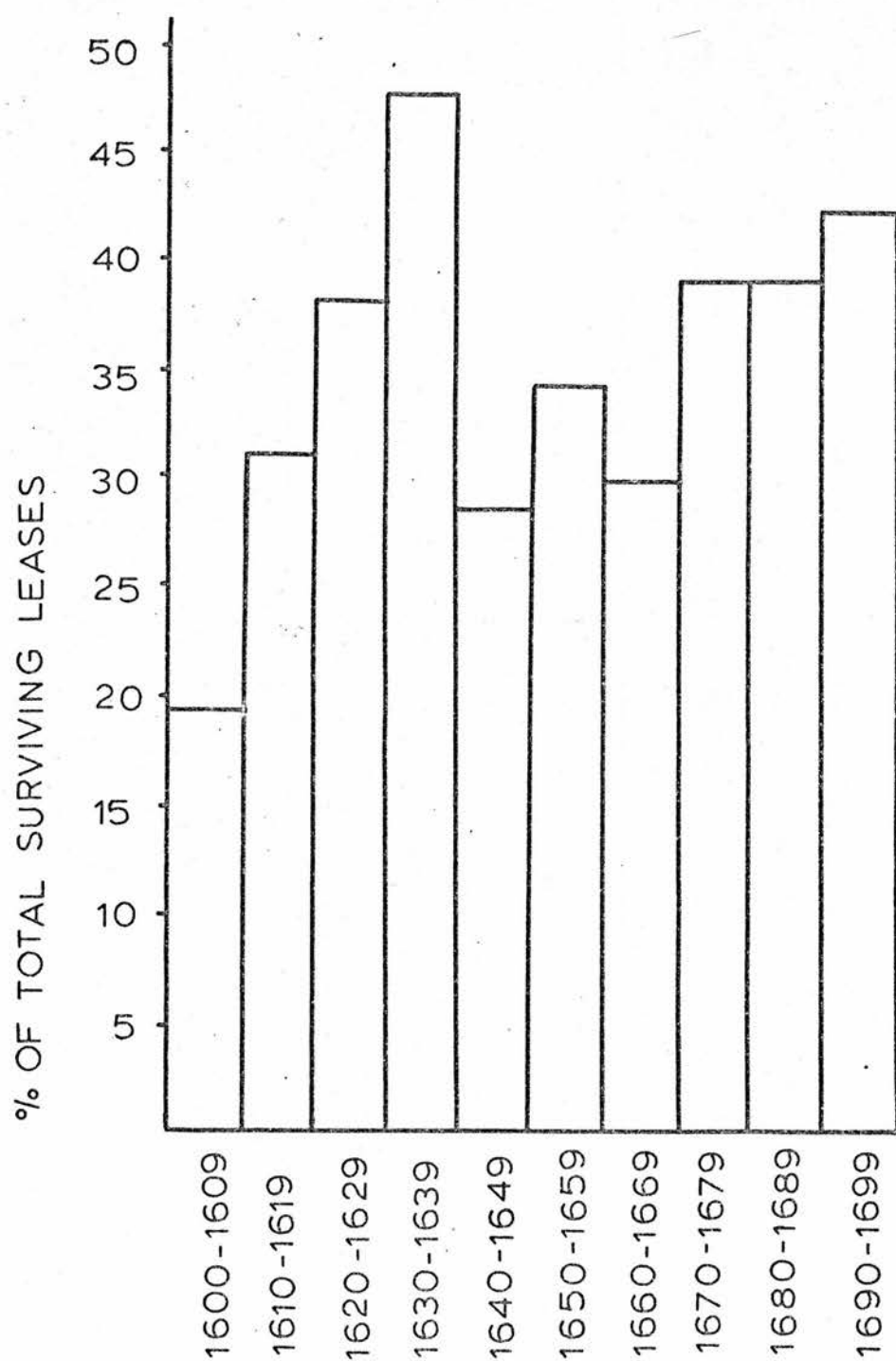
When the lengths of the surviving seventeenth-century tacks are considered, it appears that leases for periods in excess of five or six years were far from being uncommon. For the purposes of this study, leases have been divided into three classes: short leases of nine years duration or less, tacks of medium length extending from ten to eighteen years, and long leases of nineteen years or more. The nineteen-year lease became standard in Scotland during the Agricultural Revolution and was considered to be the most desirable length of tack by writers on agriculture (49). The distinction between short and medium length tacks appears most meaningful at about ten years. Some leases were, indeed, granted for nine and eleven years. The distinction between such tacks is slight. However, most short leases tended to be for seven years or less and many medium length tacks were for fifteen years, resulting in a dichotomy between which a division seems appropriate.

Medium-length and long tacks made up only 34% of the total number of surviving leases. However, when the percentage of long and medium-length tacks is calculated for each decade, a significant pattern emerges (Fig 6.3). The graph of the percentage figures corresponds broadly with that of the total numbers of written tacks (Fig 6.1). However, the growth in the numbers of long leases which were being granted in the 1620s and 1630s is even more marked. This is due to the fact that some estates,

48. Third B.M.W. *The Changing Rural Geography of the Scottish Lowlands 1700-1820* Unpublished Ph.D. thesis, University of Edinburgh (1953) 2.11

49. Sir John Sinclair *General Report on the Agricultural State and Political Circumstances of Scotland* (1814) I p.191

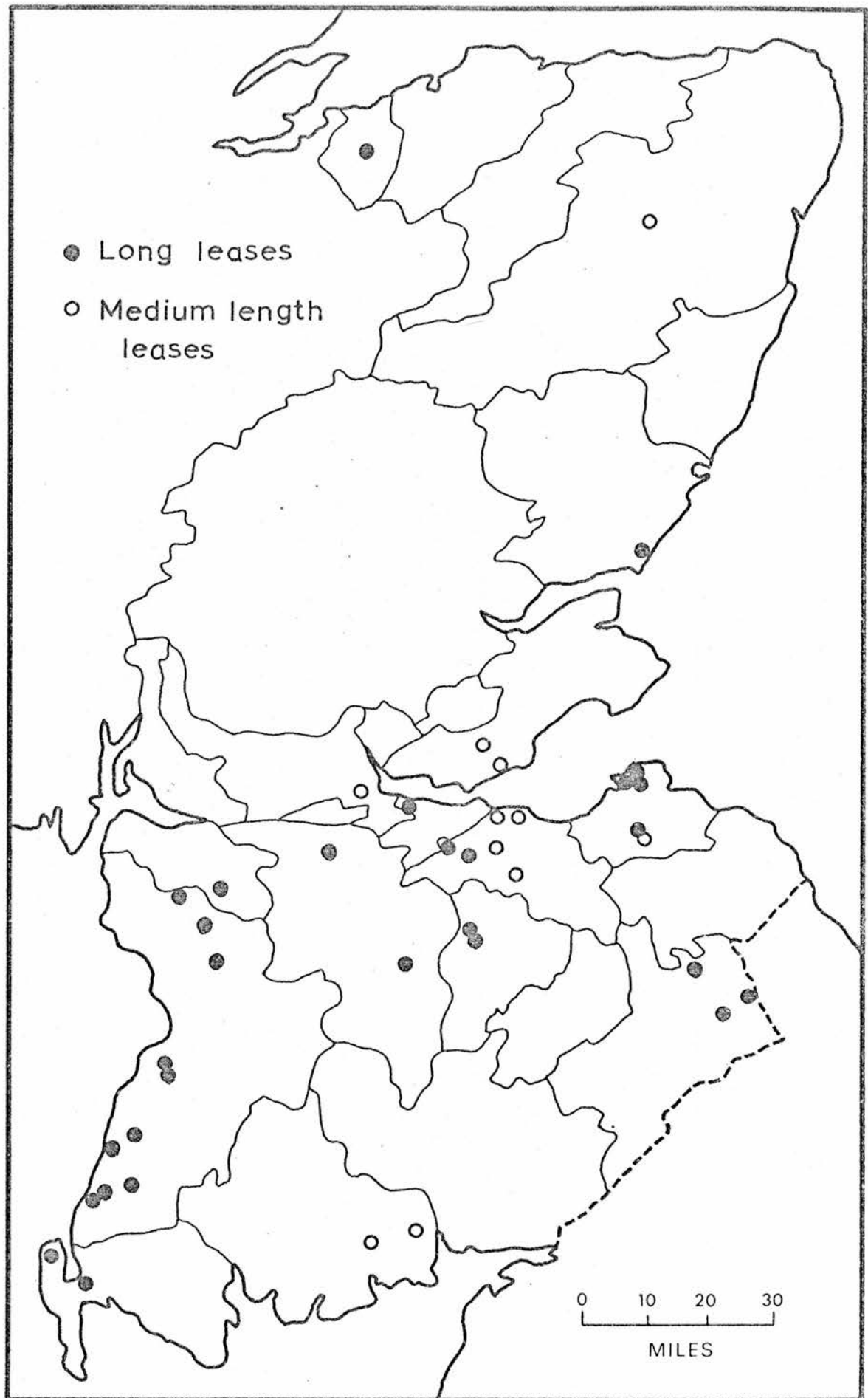
FIG. 6.3 PERCENTAGE OF LONGER LEASES
SURVIVING PER DECADE.



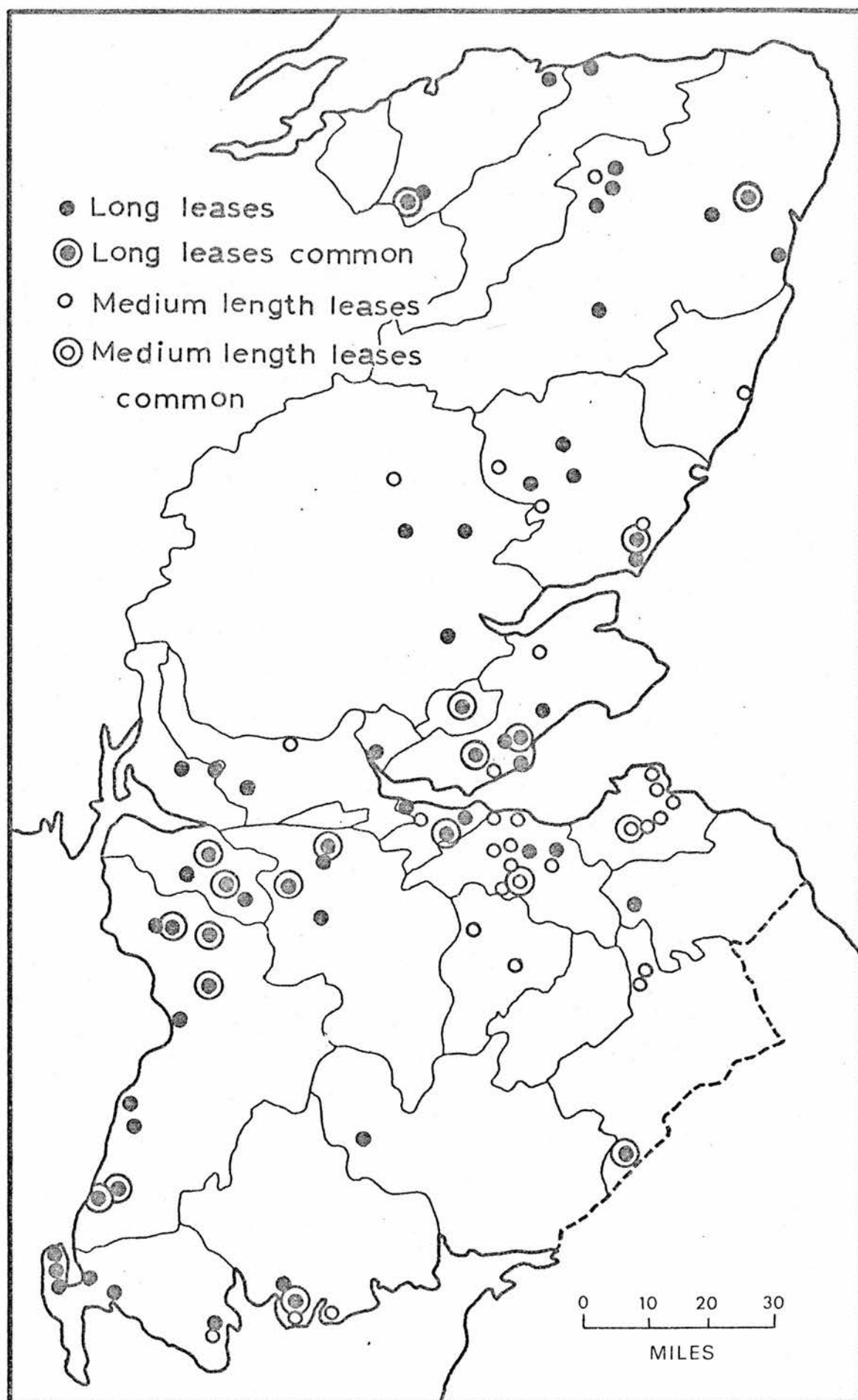
when they first began to issue written leases in substantial numbers early in the century, experimented with the granting of longer leases, as will be discussed below. Some estates subsequently reverted to short leases and it must be presumed that the experiment was not everywhere successful. However, it is clear that there was a steady increase in the percentage of surviving long and medium-length leases from the 1650s until the end of the century, suggesting that there was a steady increase in the number of such tacks which were being granted.

These long and medium length leases were not being granted universally over the whole of Lowland Scotland however. This is clear when the estates which were granting the longer tacks are mapped. It can be seen from Map 6.1 that the estates which granted longer leases in the first half of the seventeenth century were mainly situated around the Firth of Forth and in Ayrshire, with only a few outlying exceptions. Map 6.2 shows the estates which were granting longer leases in the second half of the seventeenth century. The number of estates involved was much greater and there had been a spread into Angus, the North Eastern Lowlands and the Solway Coast. However, even at the end of the seventeenth century, it remains true to say that longer leases were closely associated with lowland areas which concentrated on arable farming (see Map 8.1). Estates which were situated in upland areas with a pastoral economy do not appear to have been as concerned to grant longer tacks. Some estates in upland areas, such as those of the Buccleuch family, were not even granting written tacks at all at a time when such tacks were becoming standard for many estates in arable areas and long leases were becoming common.

MAP 6.1 LONGER LEASES 1600-50



MAP 6.2 LONGER LEASES 1651-1707



The reasons for this contrast must be related in part at least to differences in the agrarian economies of these areas. It is significant that the dichotomy continued into the eighteenth century and was still discernible when the Board of Agriculture Reports were written in the closing years of that century (50). The pace of agrarian change appears to have been much faster in areas which concentrated upon the production of grain (see Chapters 3 and 9). It is clear that in order to achieve substantial increases in grain production, the co-operation of the tenantry must have been required. The new crop rotations and fertilizers were not merely confined to the home farms of the proprietors on an experimental basis (Chapter 3). They were adopted by large numbers of tenants in the more fertile and progressive areas of Lowland Scotland.

When the corresponding pattern of development in pastoral areas is considered, a different picture emerges. The rise of the droving trade, the pastoral counterpart of the changes in arable production, was much more limited in its effects upon agrarian society. Most of the droving trade in areas such as Galloway and the Central Borders was concentrated in the hands of the proprietors (Chapters 4 and 5). All the innovations in animal husbandry which were associated with the development of the droving trade, such as selective breeding and the building of enclosures (Chapter 4), appear to have been introduced by the proprietors alone. As a result, the tenants in these areas had little direct stake in droving. They merely raised their animals in the traditional way and sold them to their landlords. It was the proprietors who undertook the fattening of the

50. Robertson G. *General View of the Agriculture of the County of Midlothian* (1793) p.18

animals, the capital cost of providing food and enclosures for them, and the arrangement of their sale to English buyers. As a result, virtually all the profits went to the landlords and not to the tenants.

There was every need to encourage tenants in arable areas to improve their farming practices in order to increase grain production. One of the reasons behind the increase in the number of longer leases in arable areas may have been the attraction of the better tenants by giving them the security to undertake improvements and adopt new techniques. By the beginning of the eighteenth century, nineteen-year improving leases were being introduced on some estates. The Caldwell estates in Ayrshire furnish examples of this. An early eighteenth-century tack for nineteen years in Dunlop parish, Ayrshire, required the tenant to "enclose the haill meadow that belongs to the said mealling with a ditch five foot broad and four feet deep, or with a ston dyke five quarters high ... and the ditch to be planted with sauchs (willows)" (51). Similar tacks involving ditching, dyking and the planting of trees occur for parts of the Gordon estates in Aberdeenshire at a slightly earlier date (52).

The widespread adoption of the improved systems of arable farming which have been considered in Chapter 3 required the selection by proprietors or estate officers of the most competent and progressive tenants who could be obtained. There is evidence for the very careful selection of tenants on some arable estates in the later seventeenth century. The desire of landowners to increase arable production appears to have transferred some of the initiative and bargaining power from the proprietors to

51. The Caldwell Papers Maitland Club (1854) p.300

52. S.R.O. Gordon muniments GD 44 17 27 (1705), 18 25 (1707)

the tenants with regard to the selection of holdings and the conditions of their lease. Some letters survive among the Leven muniments in which the chamberlain of Balwearie, near Kirkcaldy, wrote to his employer indicating the efforts that he was making in trying to engage particular tenants for vacant holdings on the estate (53). One of the favoured tenants was stated to be holding out for a lower rent (54), but it seems equally probable that others might have demanded the additional security provided by a long lease.

Similar processes can be seen to have operated elsewhere. On the Belhelvie estates, north of Aberdeen, in 1669, the factor recorded his efforts to set one of the holdings to a responsible tenant. The holding had been "put in ane ill condition" by the existing tenant who was described as a sluggard (55). The factor of the Bargany estates in 1699 also attached much importance to the selection of suitable tenants (56). Two advertisements for vacant holdings have survived among the Kinross muniments. They state that the lands were to be set in "long or short tack or yearly tenandrie", depending upon the agreement reached by the tenant and the chamberlain (57). On the Craigends estates in Renfrewshire, the proprietor actually recorded his efforts to induce particular tenants to take holdings on his estate by offering them nineteen-year tacks (58). They were allowed to take leases for shorter periods, but were encouraged to take long tacks by the offer of some remission of rent for the first two or three

53. S.R.O. Leven muniments GD 26 5 613 (1674)

54. Ibid.

55. S.R.O. Dalhousie muniments GD 45 20 12 (1669)

56. S.R.O. Bargany muniments GD 109 3420 (1699)

57. S.R.O. Kinross muniments GD 29 211 (1703)

58. Diary and General Expenditure Book of William Cunningham of Craigends ed. Dodds J. S.H.S. (1887) p.13

years (59). It is clear then that the granting of long leases was one means of attracting and retaining suitable tenants on estates which were attempting to increase their production of grain. There is a great degree of correspondence, for instance, between estates which granted longer leases in the first half of the seventeenth century and those areas which adopted liming in the 1620s and 1630s (Map 4.3).

In pastoral areas, the position appears to have been different. On the Buccleuch estates, for example, a more paternalistic approach towards the appointment of tenants continued to operate. The criteria by which tenants were selected to fill vacant holdings were not necessarily related to their skill or suitability. The chamberlains' accounts of the annual land-settings at Hawick show that when a tenant died, it was the standard practice to offer the holding to his heir, regardless of his abilities (60). Only if no successor to the deceased tenant was prepared to take on the holding were outsiders considered (61). The survival of this approach must be connected in part with the fact that developments in the agrarian economy of upland areas hardly affected the tenants, in contrast to lowland areas. In pastoral areas there was less incentive on the part of the proprietor to grant long leases or for the tenants to demand them, due to the fact that the tenants were not so directly involved in the changes which were taking place in agriculture.

When the pattern of the granting of long and medium length leases on individual estates is considered, certain features emerge. The first is that on some estates, in the earlier part of the century, scattered long

59. Diary of Cunningham of Craigends (1887) op.cit. p.13

60. S.R.O. Buccleuch muniments GD 224 907, 953/3

61. Ibid.

tacks tended to occur among large numbers of three and five year leases. This pattern survived until the end of the century on some estates. The reasons behind the granting of these isolated tacks cannot be discovered. It can only be suggested that in some cases they might have represented rewards to particularly favoured tenants or retainers of the proprietor. For instance, on the Airlie estates in Angus and Perthshire, the Earl of Airlie granted a sudden, uncharacteristic series of long tacks in 1660. It is tempting to see in this a staunch royalist celebrating the Restoration and possibly rewarding some of the retainers and tenants who had stood by him during the preceding troubled years.

On the Cassillis estates in Ayrshire and Wigtownshire, nineteen-year leases were granted in substantial numbers from the 1620s onwards. These early long leases were granted to tenants who could afford to pay for them. For a five or a seven-year tack, grassums, lump sums paid upon entry to a holding, were not charged. However, for a nineteen-year tack, tenants were usually required to pay grassums equivalent to a year's rent and sometimes more (63).

On a number of estates in the areas of Lowland Scotland where arable farming predominated, long leases began to be more common as the century progressed. In some cases, the majority of the surviving tacks for an estate are long ones. These estates are shown on Map 6.2. Due to the possible bias of the surviving documents it is not possible to state that long tacks became standard on such estates. However, on some estates, such as the Ruchsoles estate in North Lanarkshire and the

62. S.R.O. Airlie muniments GD 16 28, 77-79, 81, 85-87, 90-92

63. S.R.O. Ailsa muniments GD 25 9 73

Torrance estate south of Glasgow, virtually all surviving tacks are for nineteen years (64). In such cases, it can be assumed with a high degree of certainty that the policy of the estate favoured the granting of long tacks in preference to short ones. These leases were granted without grassums being charged and they seem to indicate a different policy from that of making the tenants pay heavily for the benefit of a long lease. Such estates now appeared to be granting nineteen-year tacks as a matter of course. This is another indication that Lowland Scotland was prospering and that her agrarian economy was gradually moving towards a more commercialised system. It was becoming increasingly necessary for tenants to increase their productivity and to have the security of tenure within which they could undertake this with confidence.

6.4 STEELBOW TENURE

Another aspect of tenure which has led to many misconceptions is the question of the prevalence of steelbow tenancy. This was traditionally a system whereby the proprietor provided the tenant with the capital equipment with which to stock his holding upon entry. The tenant was obliged to return the goods or their equivalent value at the expiry of the lease. Steelbow goods generally included livestock, particularly plough oxen, and seed corn, but may in some cases have included agricultural implements as well (65). Previous writers, such as Smout, have suggested

64. S.R.O. Ruchsoles muniments GD 237 104/4
NL. MS. 8317

65. Eg. S.R.O. Bargany muniments GD 109 2974 (1629)
S.R.O. Penicuik muniments GD 18 722 (1681)
S.R.O. Hunter of Hunterston muniments GD 102 1/29 (1581)

that steelbow tenure was very common in Scotland prior to the Agricultural Revolution (66). Handley implies that it demonstrated the primitive character of the agrarian economy, with the widespread occurrence of tenant farmers who were too impoverished to stock their own holdings (67).

The capital equipment which was given to a tenant in steelbow was recorded in his lease, where this was written, as a matter of course (68). The distribution of the occurrence of steelbow tenure extracted from written leases should thus be a fairly accurate indication of its presence. When this distribution is plotted (Map 6.3) it is clear that while steelbow tenure occurred fairly widely throughout Lowland Scotland, it does not appear to have been nearly as common as has been claimed by previous writers.

One variant of steelbow tenure which was quite common in certain parts of Lowland Scotland may have given rise to the idea that the granting of steelbow goods was more common than was actually the case. This was the system of granting steelbow straw (69). It entailed the outgoing tenant leaving the straw of his last crop behind him for the use of the incoming tenant who was likewise obliged to leave a similar quantity of straw at his removal. The purpose of this was to provide the incoming tenant with adequate fodder for his livestock over the first winter in his new holding. It obviated the necessity of transporting large quantities of

66. Smout T.C. (1969) *op.cit.* p.131

67. Handley J.E. (1953) *op.cit.* pp.50-51

68. Eg. S.R.O. Dalrymple muniments GD 110 695 (1688)
S.R.O. Morton muniments GD 150 2013 (1597)
S.R.O. Lochnaw muniments GD 154 440 (1677)

69. Eg. S.R.O. Penicuik muniments GD 18 708 $\frac{3}{4}$ 1681)
S.R.O. Hay of Belton muniments GD 73 1/11 (1704)
NL. MS. 8217 (1661)

bulky fodder from the tenant's last farm. Map 6.3 shows that the system was confined to areas which specialised in arable farming. These were areas where permanent pasture was in short supply and where great reliance was placed upon straw for winter fodder.

This system was sometimes extended to cover other commodities. Steelbow manure was occasionally mentioned (70), and some tenants on the Lochgelly estates were required to leave behind them a certain area of the outfield enclosed by temporary fold dykes and manured ready for cropping (71). In areas where liming was practised, some tenants were bound to provide a sufficient supply of burnt lime or coal at their removal.

This latter type of steelbow does not necessarily imply anything primitive about the system of farming with which it was associated. The use of the term "steelbow" for both systems is unfortunate and confusing, as the occurrence of the latter system is not an indication of poverty on the part of the tenants. It was a sensible arrangement, designed to prevent an incoming tenant from suffering any prejudice to his first crop or to his livestock. True steelbow tenure does not appear to have been very prevalent. This demonstrates that the organisation of agriculture in Lowland Scotland at this time was not nearly as inefficient as has sometimes been claimed and that the tenants were not, on the whole, so poverty-stricken as has been maintained.

70. S.R.O. Shairp muniments GD 30 638 (1632)

71. NL. MS. Minto muniments CB 144

6.5 CONCLUSION

Two major conclusions relating to tenurial organisation in seventeenth-century Lowland Scotland emerge from the foregoing study of leases. Firstly, the analysis indicates that systems of tenure were by no means as primitive as has previously been suggested. Secondly, the organisation of tenure can be seen to have evolved significantly during the course of the century. It is evident that written leases became increasingly common as the century progressed. By the turn of the eighteenth century, tenants with such tacks were demonstrably in a majority on some estates and, in all probability, on many others. The number of long leases which were being granted also increased steadily throughout the period. However, as with the granting of written tacks, the policy of individual proprietors and especially the type of economy under which an estate operated, caused significant regional variations. By the end of the century, long leases appear to have become very common if not standard on many estates in arable-oriented areas.

These changes indicate that developments in the agriculture of Lowland Scotland in the seventeenth century did not take place merely in the realm of farming practice, but also in the field of agricultural organisation. New techniques of husbandry would have been stultified in their effects had they been rigidly bound within the restrictive confines of an unyielding social organisation. In order to let them achieve their full effect, the structure of agrarian society had to be changed in order to accommodate them more readily. As a result of the trend towards

increased commercial production in the arable sector of agriculture (see Chapters 3 and 9), systems of tenure were necessarily modified. In turn, the new long, written leases provided in themselves an incentive to improve and experiment. The changes in tenurial organisation were gradual and have not attracted as much attention as some developments in agricultural practices. However, they represent an important aspect of the change from a paternalistic system of landlord-tenant relationships, where security of tenure was implied but never stated, to a more commercialised one where the security of any individual depended entirely on his success or otherwise as a farmer. Such a change was of critical importance in the promotion of other branches of agrarian change.

CHAPTER VII

FARM-STRUCTURE

7.1 INTRODUCTION

One of the most important indices of the efficiency of an agrarian system is farm-structure. This term includes the layout and size of the farm itself, and the number and social organisation of the cultivators. These are major influences upon productivity.

In the last chapter it was suggested that significant developments in agricultural techniques could not have taken place in seventeenth-century Lowland Scotland without at least some corresponding changes in the structure and organisation of agrarian society. Chapter 6 examined the development of written and long leases as one facet of this complementary trend. This study has viewed the various aspects of agrarian change in Lowland Scotland in the seventeenth century as indicating a tendency towards the increasing commercialisation of agriculture. The economy has been considered as moving away from the co-operative systems of peasant subsistence farming, which characterised much of Western Europe in the Middle Ages and which had survived in Lowland Scotland with relatively little change, in contrast to England. These developments in rural society were every bit as important as improvements in agricultural practices. The study of these changes is closely linked with the developments in tenorial organisation which have been considered

in the previous chapter, and complements the discussion of changes in agricultural techniques which have already been reviewed.

Previous studies of Scottish agriculture prior to the Agricultural Revolution have tended to focus a great deal of attention on farm-structure (1). In particular, it has been contrasted unfavourably with the systems which were supposed to have been introduced by the eighteenth-century Improvers (2). Indeed, it is not going too far to say that the understanding of two major interrelated aspects of farm-structure - the runrig system and the joint- or multiple-tenant farm - have been seen as the central problems in the study of pre-Improvement Scottish agriculture (3).

These problems have not loomed as large in the present study. The research which has been conducted has provided comparatively little new information relating to the nature and origin of runrig. This topic is considered to lie outwith the remit of a study of agrarian change. Instead, this chapter will focus on two major developments. The first of these is the growing importance of farm-structures in which the labour force was organised upon strictly commercial lines, and not on the old system which depended upon mutual co-operation between the tenants. The second is the consolidation of holdings from the system of fragmented plots which was necessary under the old communal practices. However, before proceeding to a consideration of farm-structure in Lowland Scotland

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1. Eg. Handley J.E. *Scottish Farming in the Eighteenth Century* (1953) pp. 37-50
 2. Eg. Caird J.B. *The Making of the Scottish Rural Landscape* S.G.M. LXXX (1964) p.76
 3. For recent discussions of these topics see Whittington G. *The Problem of Runrig* S.G.M. LXXXVI (1970) pp.69-73, and Hamilton H. *An Economic History of Scotland in the Eighteenth Century* (1963) pp.49-51

during the seventeenth century, and the changes which it underwent during this period, it is appropriate to summarise briefly the views of previous writers.

In the following discussion, "holding" is used to mean the portion of land actually worked by a tenant, and "farm" refers to the unit within which holdings were organised. Several holdings might be combined to make up one farm, but a farm could also be composed of a single holding. This distinction must be applied in agrarian systems where a "farm" could be possessed and worked by more than one tenant.

It has generally been considered that before the Agricultural Revolution in Scotland the standard unit of agrarian organisation throughout the country was the multiple-tenant farm (4). Its expression in terms of settlement was the *ferm-toun* where the joint-tenants with their sub-tenants and servants lived together as a single co-operative unit (5). A distinction has been drawn by some writers between co-joint tenant farms and multiple-tenant farms. On the former, the tenants held the land by a single lease and worked it entirely in common. On the latter, each tenant leased his share of the farm separately and paid rent individually, although working together with his fellow tenants in many of the major operations of agriculture (6).

Some writers have recognised that large single-tenant farms did occur in Lowland Scotland in the later seventeenth and early eighteenth centuries (7). However, their numbers were generally assumed to have

4. Hamilton H. (1963) *op.cit.* pp.49-51

5. *Ibid.*

6. Whittington G. Runrig and the 'Runrig System' in relation to Infield-Outfield Paper presented to the Institute of British Geographers Agrarian Landscape Research Group, Carberry Tower, 1969

been small and their importance limited. This view has only recently been challenged. Ferguson believed that while multiple-tenant farms were important in Scotland during the seventeenth century, single-tenant farms were far from being rare (8). Dodgshon, in a detailed study of Berwickshire and Roxburghshire, has indicated that single-tenant farms comprised up to 46% of the total number of farms on various estates in this area before 1730 (9).

Smout considered that several distinct types of farm-structure were present in seventeenth-century Scotland (10). He distinguished three main categories. The first of these was the large single-tenant farm where the land was worked with the help of sub-tenants and servants. The second was the multiple-tenant farm with fragmented strips allocated in periodic runrig, fixed runrig, or rundale but with each tenant holding his share by a separate lease. Thirdly there were joint-tenant farms where the tenants held the land by a single lease and worked it in common. Smout ranked these systems according to their sophistication, suggesting that joint-tenant farms worked in common were the most primitive type of farm structure and the single-tenant farm the most developed (11). This implied an element of sequential development and dynamic change in the farm-structure of Lowland Scotland which other writers had not

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7. Third B.M.W. The Changing Rural Geography of the Scottish Lowlands 1700-1820 Unpublished Ph.D. thesis, University of Edinburgh (1953) 3.5
 8. Ferguson W. Scotland 1689 to the Present Volume IV of The Edinburgh History of Scotland (1968) p.75
 9. Dodgshon R.A. Agricultural Change in Roxburghshire and Berwickshire 1700-1815 Unpublished Ph.D. thesis, University of Liverpool (1969) p.21
 10. Smout T.C. A History of the Scottish People 1560-1830 (1969) p.113
 11. Ibid.

considered. It also suggested the possibility of regional variations, but due to the all-embracing scope of his work, Smout was unable to pursue this theme in greater detail.

Co-operation between tenants in agriculture has generally been considered to have been closely related to the multiple-tenant farm in its various forms and to the *ferm-toun* (12). The standard theory was that most tenants were too poor individually to be able to afford the team of eight or more oxen which was necessary to drag the clumsy Scots plough through a boulder-encumbered clay soil. As a result, they had to live together in order to pool their resources effectively. These tenants furnished a ploughteam between them and the ploughing itself was done communally. Due to their lack of capital they could not afford many hired servants and their holdings were so small that subletting to cottars was only possible on a limited scale. As a result, such tenants had to work together in all the labour-intensive operations in the farming calendar such as sowing, harrowing and harvesting (13).

In a multiple-tenant farm, shares of land had to be allocated fairly with an equal distribution of good and bad ground. This resulted in the fragmentation of each tenant's holding into a series of plots which were intermingled with those of his fellows throughout the various infields and outfields. This system, whether the strips were fixed or subject to periodic re-allocation, has generally been termed the *runrig* system (14). Fragmentation resulted in even greater co-operative effort for it made a common crop rotation almost mandatory and encouraged the use of

12. Hamilton H. (1963) *op.cit.* p.48

13. Ibid. and Smout T.C. (1969) *op.cit.* pp.38-44

14. Dodgshon R.A. (1969) *op.cit.* pp.38-44

communal dates for sowing, harrowing and harvesting (15). This type of farm organisation has been seen as being oriented towards a subsistence economy rather than a commercial one (16). However, it should not necessarily be supposed that substantial grain surpluses could not have been produced on such farms, especially in the more fertile areas. Nevertheless, where this was the case, the impression is that such surpluses were produced despite rather than because of the system.

Most of the general accounts of farm-structure in Scotland before the Agricultural Revolution have been based on the more easily accessible printed sources (17). A large proportion of these are secondary (18). The writings of the agricultural improvers ought not to be taken too literally, as has been suggested in the Introduction. Even the Board of Agriculture Reports are untrustworthy regarding the condition of agriculture at periods earlier than the end of the eighteenth century. The writers of these reports do not appear to have been particularly well informed about past conditions. Many of their references indicate that hearsay and tradition were their principal sources of information regarding the first half of the eighteenth century and earlier periods (19). Their references to archaic features in the contemporary landscape, often in marginal areas, should not be taken to imply that such features had necessarily once been widespread (20). To obtain a clearer picture of the state of farm organisation in the seventeenth century, the primary source material must be studied.

15. Smout T.C. (1969) *op.cit.* p.114

16. *Ibid.* pp.114-115

17. Eg. Handley J.E. (1953) *op.cit.*

18. Handley, for instance, makes considerable use of the Board of Agriculture Reports.

7.2 THE MULTIPLE-TENANT FARM

There are two principal sources of information on the number of tenants per farm in seventeenth-century Lowland Scotland. The first of these is estate rentals. These are fairly common among collections of private estate muniments, and some 400 have been consulted in this study. However, only a small proportion of these are of use in this instance. Many rentals list only the farms and do not give the names of the tenants, while others are merely inventories of tenants without reference to the farms on which they held land.

The other major source is the Poll Tax records for 1695-96. This tax was initiated by William III but proved to be so difficult to organise and collect that it was soon discontinued (21). The value of these records is that where poll-lists have survived, they record every adult by parish with their occupation and, in rural areas, the farm on which they lived.

Unfortunately, these poll-lists have only survived for a few areas. Complete lists are available for the counties of Aberdeen and Renfrew, but the few records which are available for other areas do not usually contain poll-lists. The Renfrew lists have proved to be unusable as they do not always clearly indicate the status of each person nor assign him

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19. Eg. Buchan-Hepburn G. *General View of the Agriculture and Rural Economy of East Lothian* (1794) pp.18, 28
 20. Eg. Robertson J. *General View of the Agriculture in the Southern Districts of the County of Perth* (1794) p.117. Descriptions such as this one of surviving multiple-tenant farms in areas which had probably always been marginal must be interpreted with care
 21. *List of Pollable Persons in the Shire of Aberdeen 1696* Spalding Club 1844 I pp.vi-vii

to a particular farm. The Aberdeenshire records, by contrast, give the status of virtually every adult and list them by farm under their respective proprietors.

Consequently, it is possible to make a virtually complete analysis of the tenant structure of farms in Aberdeenshire for 1696. Elsewhere this may only be done for a limited number of estates where suitable rentals are available. Because of this it has been thought appropriate to begin with a study of Aberdeenshire and then move on to a more general consideration of farm-structure in Lowland Scotland. It is fortunate that complete records are available for this county, for few others in Lowland Scotland would have served as well. Aberdeenshire is large: 88 parishes have been included in the analysis. It contains within its bounds, from the upland plateaus of the Cairngorms to the fertile Lowlands of the Garioch and the moors of Buchan, examples of most of the types of country which are found elsewhere in Lowland Scotland. Aberdeenshire might thus be considered in some ways as a microcosm of Lowland Scotland (22). This analogy cannot be carried too far of course. However, most of the changes in agriculture which have been shown in previous chapters to have occurred throughout Lowland Scotland can be demonstrated to have taken place in Aberdeenshire to some extent. The principal exceptions to this were some of the developments in the maintenance of soil fertility, particularly liming, and certain innovations in crop rotations (see Chapter 3).

The percentage of farms with only a single tenant has been calculated

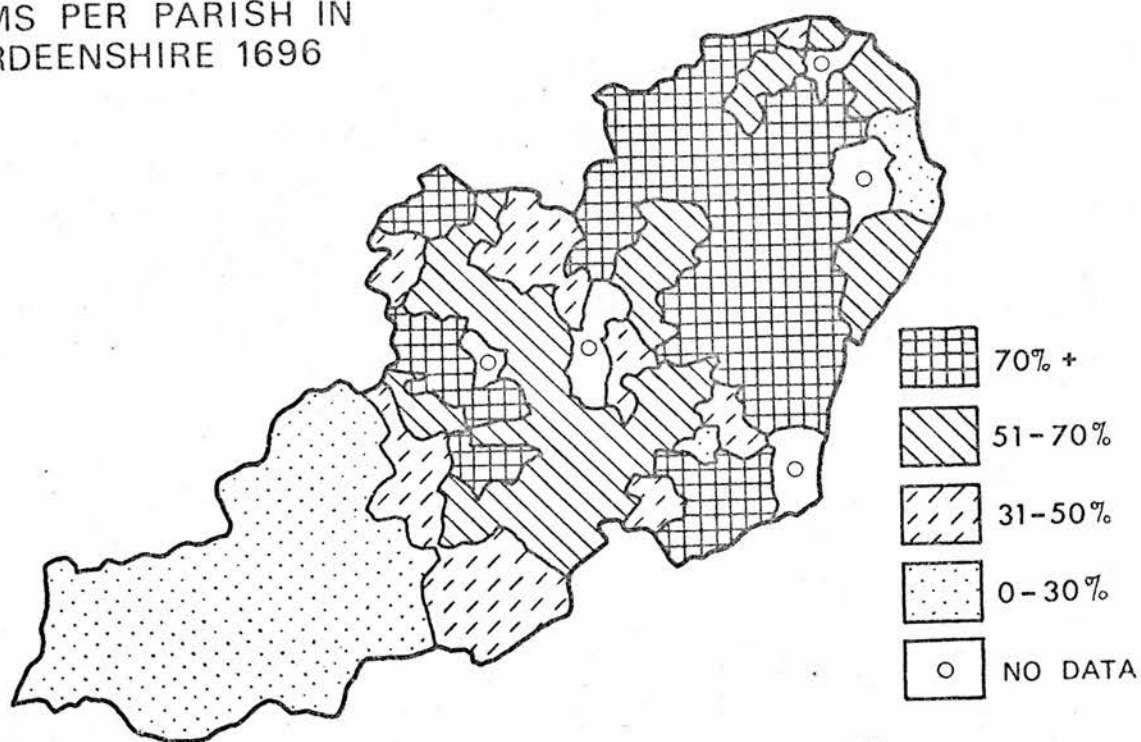
22. This idea has also been put forward by Walton K. in *Population Changes in North East Scotland 1696-1951* Scot.Stud.V (1961) p.149

for each parish. A comparison between Maps 7.1 and 7.2 suggests that there is a broad correlation between the percentage of single-tenant farms per parish and topography. The greater part of the parishes where single-tenant farms were in a majority were situated in the lowlands around Aberdeen, in the Garioch, and the valleys of the Ythan and Deveron. These are areas which from the accounts of the sixteenth and seventeenth-century topographers, and from the rent structures of estates (see Chapter 8), are known to have concentrated upon arable production. Buchan, an area which tended more towards a pastoral economy (see Chapter 8), shows a distinctly higher percentage of multiple-tenant farms in many of its parishes. There are a few parishes with a high percentage of single-tenant farms situated along the upland margins. However, most of these parishes contained lowland enclaves among the hills, such as Logie-Coldstane, situated in the fertile Cromar basin. Rentals from these areas indicate that they concentrated principally upon grain production (23).

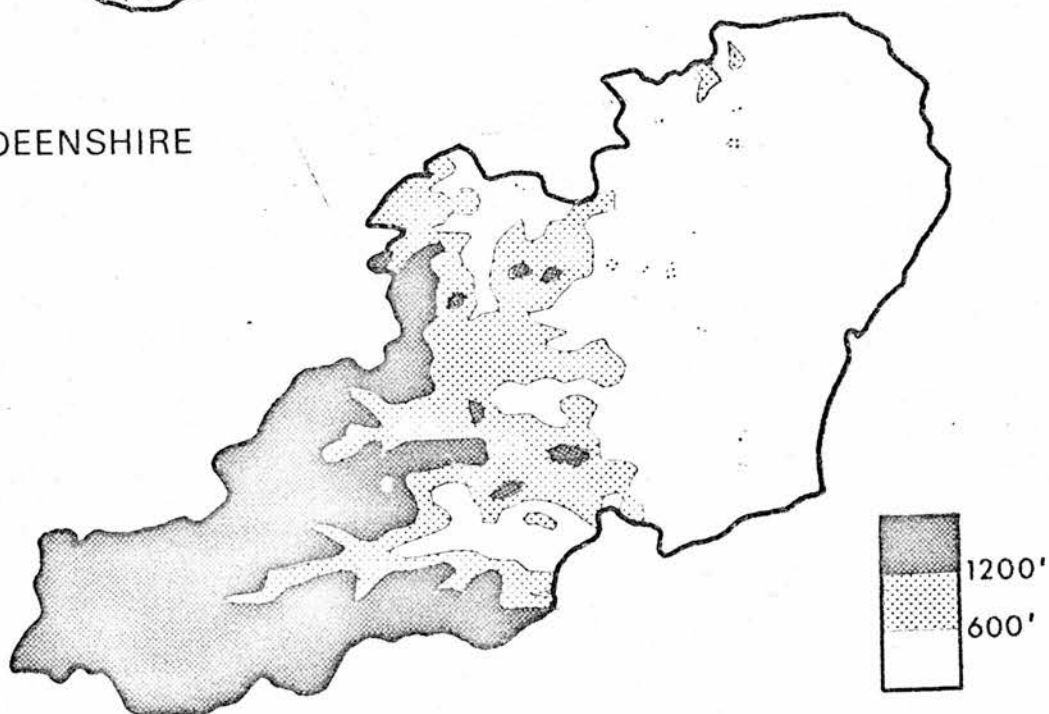
By contrast, parishes where multiple-tenant farms were in a substantial majority were almost entirely situated in upland areas where the economy was pastorally oriented. The parishes which possessed farm-structures with only small majorities of single- or multiple-tenant farms tended to be situated among the low hill country which fringes the Grampians. The rent structures of estates in these areas indicate that a mixed economy predominated (see Chapter 8), without a distinct emphasis on either arable or pastoral farming. There thus appears to have been a broad relationship between the farm-structure of parishes in Aberdeenshire at this period and their agrarian economy.

23. Eg. S.R.O. Gordon muniments GD 44 51 747 (1612)

1 % OF SINGLE-TENANT
FARMS PER PARISH IN
ABERDEENSHIRE 1696



2 ABERDEENSHIRE



It will be noted that nothing has been said so far about the sizes of individual holdings on single- and multiple-tenant farms. This will be considered in detail below. No absolute data concerning this are available from the Aberdeenshire poll-lists. It might therefore be argued that a large number of the single-tenant farms which have been included in the analysis were smallholdings. If this were the case, then much of the foregoing work would be invalidated.

This idea can be readily dismissed. Separate crofts can generally be identified in the poll-lists, and have been excluded from the study. The size of single-tenant farms must naturally have varied but the relative extent of such holdings can generally be surmised from the household of the tenant. Single-tenant farms in lowland parishes which are known to have specialised in grain production generally had a number of sub-tenants and servants attached to them. For instance, the single-tenant farm of Balmedie, in Belhelvie parish north of Aberdeen, had two male servants, two female servants, two herds, five cottars with no trade, two cottars described as weavers and one cottar listed as a cobbler (24). This pattern is a fairly standard one. The prosperity and social position of the tenants of such farms is sometimes indicated by their designation of "gentleman" in the poll-lists (25). This involved an extra payment and may in many cases have been mere social snobbery. However, it is indicative of the position which the tenants of the larger farms were beginning to occupy in rural society.

By contrast, multiple-tenant farms in the upland parishes of Aberdeenshire tended to have large numbers of tenants with very few or no sub-

24. Aberdeen Poll-lists op.cit. II p.525

tenants and servants. For example, the farm of Knock in Glenmuick parish had twelve tenants with no cottars or servants (26). This type of farm was common in the parishes which recorded high percentages of multiple-tenant farms (see Map 7.1).

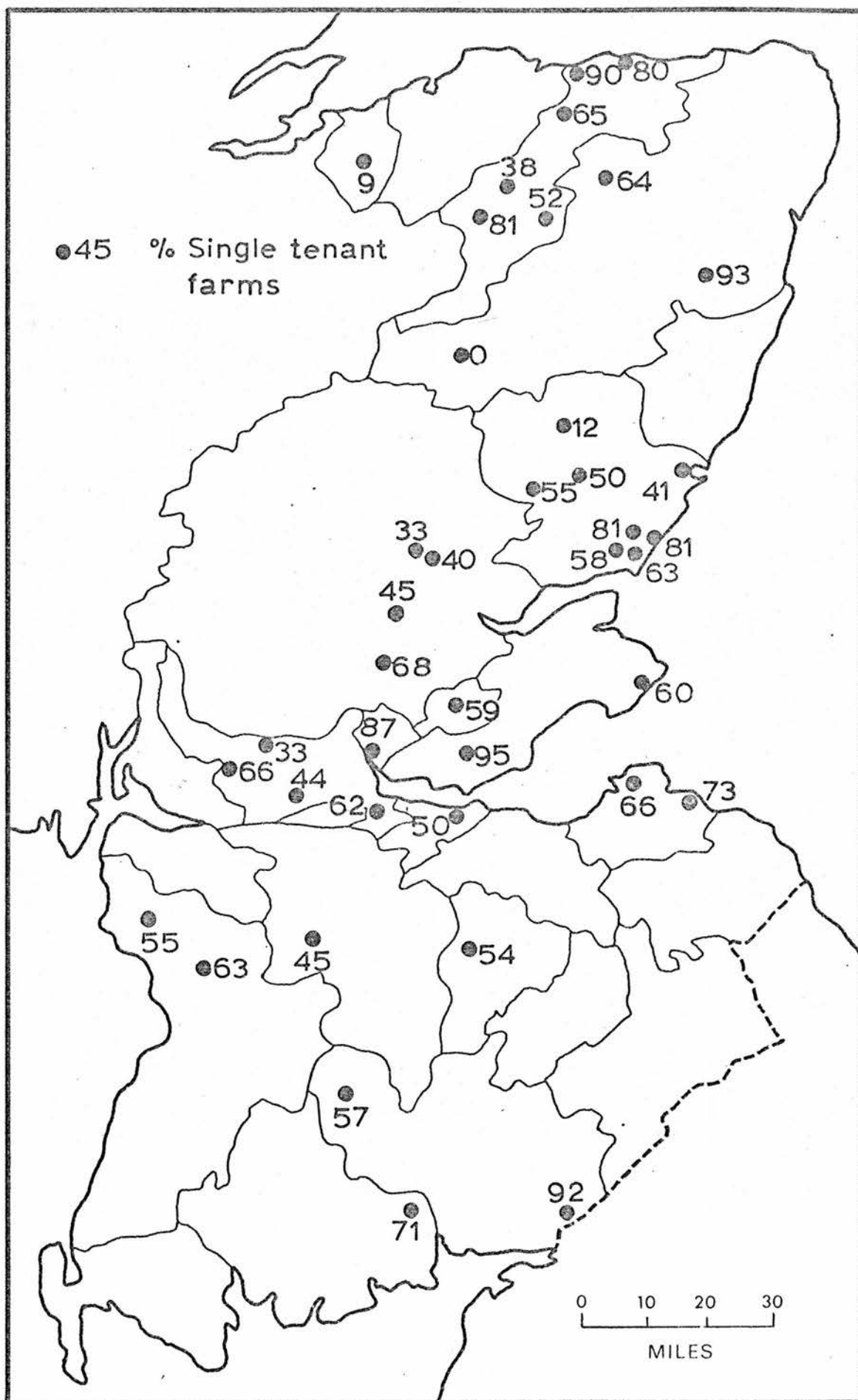
This contrast between arable and pastoral areas should not be taken too rigidly however. There were considerable numbers of multiple-tenant farms in arable areas with two, three or even four tenants. Nevertheless, the tenants on such farms frequently had households which matched the size of those on single-tenant farms in the same area, suggesting that the sizes of the holdings were comparable. In many cases, the only difference between the tenants on such multiple-tenant farms may have been that the former lived together in the same ferm-toun while the latter lived separately. The co-operative element in their agriculture may have extended no further than this. The significance of this type of farm and the size of its holdings will be considered below.

It remains to test the hypothesis that Aberdeenshire was in certain respects a microcosm of Lowland Scotland as a whole. The relationship between tenant numbers per farm and the agrarian economy which has been demonstrated above must be shown to have occurred more widely. In order to achieve this, all rentals between 1660 and 1707 in which the numbers of tenants per holding are given have been treated in a similar manner to the Aberdeenshire poll-lists. The number of such rentals is not large, as has been explained, and only 38 have been used in this study. Nevertheless, the estates which are covered by these rentals are spread fairly widely throughout Lowland Scotland (Map 7.3)

25. Aberdeen Poll-lists *op.cit.* II p.525

26. *Ibid.* I p.172

MAP 7-3 % SINGLE-TENANT FARMS



A superficial examination of the map might suggest that the percentage of single-tenant farms was highest on estates in east-coast lowland areas and lower on estates in upland areas and in west-coast lowlands. However, in order to test this more rigorously, a more detailed analysis has been undertaken. It was suggested that there was a relationship between the tenant structure of farms and the agrarian economy in Aberdeenshire. This idea has been tested for the rentals by classifying them according to their rent structures. In Chapter 8 it will be argued that estates can be divided into those whose economy was basically arable, pastoral or mixed, according to whether the principal rents of the tenants were paid in grain, money or a combination of both. The estates are listed by their rent structures in Table 7.1 and it can be seen that the mean values for the percentages of single-tenant farms in each group are distinctly different. An analysis of variance test was carried out on the three groups and it proved to be significant at the 1% level. This indicated that the differences between the samples were far greater than the differences within the samples. Thus the suggestion that there was a broad correlation between numbers of tenants per farm and the type of agrarian economy over Lowland Scotland as a whole appears to have some validity. It seems that estates in arable areas tended to have higher percentages of single-tenant farms in the later part of the seventeenth century, while estates in pastoral areas generally had a high percentage of multiple-tenant farms. Estates with mixed economies lay somewhere between the two extremes.

It must be remembered however, that the sample is a small one and that the conclusion is a generalisation which did not necessarily apply

TABLE 7.1 PERCENTAGE OF SINGLE-TENANT FARMS
ON ESTATES BY RENT STRUCTURE

<u>Estate</u>	<u>County</u>	<u>% single tenant farms</u>
MONEY		
Blackford	Perth	68
Blair	Ayr	55
Braemar	Aberdeen	0
Buchlyvie	Stirling	33
Cabrach	Banff	52
Clova	Angus	40
Glenrinnnes	Banff	81
Grandtully	Perth	40
Lethem	Nairn	9
Lyne	Peebles	54
Glassford	Lanark	45
Kinross	Kinross	59
Mabie	Dumfries	71
Queensberry	Dumfries	57
Strathbran	Perth	33
	Mean	42
PART MONEY, PART GRAIN		
Abercairney	Perth	45
Airlie	Angus	55
Callender	Stirling	62
Carmyllie	Angus	81
Cortachy	Angus	50
Drymen	Stirling	66
Huntly	Aberdeen	64
Kilsyth	Stirling	44
Lintrathen	Angus	68

TABLE 7.2 sheet 2

<u>Estate</u>	<u>County</u>	<u>% single tenant farms</u>
PART MONEY, PART GRAIN contd		
Mulderie	Banff	65
Thornton	Ayr	63
	Mean	<u>60</u>
GRAIN		
Alloa	Clackmannan	87
Balcaskie	Fife	60
Brechin	Angus	41
Deskford	Banff	80
Drem	East Lothian	66
Dundas	West Lothian	50
Enzie	Banff	95
Garioch	Aberdeen	93
Innerwick	East Lothian	73
Kellie	Angus	81
Lochgelly	Fife	95
Panmure	Angus	63
	Mean	<u>72</u>

universally. It will be seen in Table 7.1 that despite the high level of significance of the analysis of variance test, the range of percentages in each group is quite large. There is, for instance, no explanation in terms of the theory proposed above, for the high percentage of single-tenant farms on the Glenlivet estates in Banff and the very low percentage on the Lethen estates in Nairnshire. Both estates were situated in similar types of country and possessed the same rent structure. It might have been expected that the percentage of single-tenant farms would have been uniformly low on both estates. A good deal of the variation may have been attributable to the different attitudes of individual proprietors. In some instances, progressive landowners might have modernised the farm structures of their estates in complete contrast to their reactionary neighbours in much the same way that some of them modified their rent structures (see Chapter 8).

In the last chapter, differences in the pattern of the granting of leases between upland and lowland areas were discussed. It was argued that the pace of agrarian change was much faster in the areas which concentrated upon grain production at this time. The tenantry in these areas were also thought to have been more closely involved in the developments which were taking place in the economy than those in pastoral districts. This had the effect of bringing about significant changes in the character of tenure on many lowland arable estates while tenurial organisation in pastoral areas was hardly affected.

Similar influences must lie at the heart of the contrasts which have been discussed above. All the available evidence suggests that the traditional multiple-tenant farm was more suited to a subsistence-oriented

and the large single-tenant farm to commercial production. If this was so, then it would appear that the tenant structures of farms in arable areas were more highly evolved than those of upland areas. If this sequential development, similar to the one described by Smout, actually occurred, then an explanation for its occurrence must be sought. It is probable that the key to this explanation lies in the different organisational demands of arable land which was worked for subsistence and commercial profit.

Virtually all hill pasture in Lowland Scotland at this time was either common or common pasture (see Chapter 4). Tenants were not allocated shares in this type of pasture as fixed portions of ground. Instead, the number of animals which they were entitled to graze on the land was stipulated and the animals were free to pasture at will over the whole area. As a result, when farms in upland pastoral areas are described as being divided up among a number of joint-tenants, all that was divided in practice were the relatively restricted areas of arable land, both infield and outfield, and the hay meadows, which surrounded the farmsteads. This land was not designed to produce a commercial grain surplus. Farms in such areas would not generally have been required to pay any grain as part of their rents. The profits from which their rents were met would have been obtained from livestock.

The purpose of these arable plots was, if possible, to provide the tenants with enough grain to live on. Upland areas tended to be deficient in grain and found it necessary to import it from adjacent lowland areas (27). The arable areas around upland farms were designed to reduce this deficit as far as possible. Such land often lay at fairly high altitudes (28).

27. S.R.O. Gordon muniments GD 44 51 74 (1692)

As it was usually situated in valleys, the best alluvial soils must have been particularly liable to flooding (29). Consequently, high yields would not have been likely in most years. In Chapter 3 it has been suggested that yields of more than three or four to one on arable land of this kind would not have been common. Under the agricultural technology of the time, it would thus have been impossible for these districts to have produced large grain surpluses for commercial sale. Even if this had been possible, the distance from marketing outlets and the difficulty of transporting grain overland (see Chapter 8) would have precluded such a development.

There was thus no reason to reorganise the arable areas of these upland farms on lines of maximum commercial efficiency, as there was no need to maximise grain production for commercial sale. The main effort of the tenants would have gone into livestock farming and as long as the limited arable areas could provide a reasonable return at a more or less subsistence level for a fairly small input of labour, there was no incentive to change the system.

In lowland areas where the emphasis was on the commercial production of grain, the situation was entirely different (see Chapters 8 and 9). In a recent paper, Carter has argued that "efficiency" in an agricultural system can be defined in terms other than the maximisation of profit (30).

28. Eg. the returns of teind victual for the Buccleuch estates (S.R.O. Buccleuch muniments GD 224 943 (1625)) indicate that crops were grown at altitudes of about 900 feet and higher in Ettrick Forest and Teviotdale

29. Ibid. 943 27, 935 3, 953 3, regarding the damage to crops by flooding in Liddesdale, Teviotdale and Yarrow 1689-90

30. Carter I. Economic Models and the Recent History of the Highlands Scot.Stud. XV (1971) p.105

However, there can be no doubt that in a commercial economy, efficiency may usually be equated with the concentration on the greatest possible production of the most marketable commodities.

It has been argued in other chapters that most of the changes which took place in the agrarian economy of Lowland Scotland during the seventeenth century came about through the increasing commercialisation of agriculture. In the context of commercial grain production, a large arable farm worked by a number of joint-tenants does not appear efficient. If the allocation of land to each tenant was scrupulously fair, then fragmentation was inevitable. This would have been a major obstacle to efficiency in itself, but the very presence of so many tenants would have led to the wasteful duplication of effort and capital equipment. The tenants of such smallholdings would have tended to be short of capital. With the accent being upon co-operative working, it is unlikely that the individual tenant would have been tempted to put any more effort into communal operations than any of his fellows. It would have been impossible for him alone to reap the benefits of his own work. Equally, the restrictions placed upon the freedom of action of each tenant by the need for communal organisation would have stifled any individual initiative to improve the system. With the probability that some tenants would have been less active or able than their fellows, the pace of work must inevitably have been that of the slowest.

By contrast, a similar-sized farm leased to a single tenant who cultivated the land with the aid of sub-tenants and hired servants, appears a much more efficient type of farm structure for the maximisation of grain production. Such a farmer would not have been bound by the restrictions

which would have encumbered a joint-tenant. He would also have been able to work his sub-tenants and servants as hard as possible. Under this kind of system a tenant would have been as much an overseer of operations as a direct participant. On such a holding, consolidation would have been possible, if not into a single block then at least into larger parcels. The farm might have lain in proprietary runrig, in which case the tenant could have done nothing, or it may have lain in tenant runrig with a neighbouring farm. However, there would have been no runrig within the farm as an organisational unit as would have been the case on a multiple-tenant farm of the same size.

Farms of this type were clearly commercially oriented. Traditional multiple-tenant farms in arable areas, while being capable of producing a surplus of grain, would not have done so as effectively. If agriculture was becoming more commercialised there would have been an incentive for forward-looking proprietors of estates in arable areas to reform the structure of their farms. They could have achieved this by gradually reducing the number of tenants on each farm, increasing the size of individual holdings and allowing them to be consolidated into more compact units which could have been leased out to the more prosperous and competent tenants. This would have involved a degree of social mobility without necessarily reducing the number of people employed on the land. Such a reorganisation might have had the effect of demoting the poorer or less able tenants to the status of sub-tenants or even landless labourers, while the better tenants who had enough capital of their own to stock one of the large holdings would have risen to form a new upper class among agricultural society.

There is ample evidence that commercial horizons widened in Lowland Scotland during the seventeenth century, particularly in the decades following the Restoration. The decline of political unrest, the growth of markets, and improvements in the infra-structure of trade all appear to have created an economic environment which favoured the expansion of commercial grain production (see Chapters 8 and 9). Consequently, bearing in mind the model of sequential development which has been proposed above, it might be expected that there would have been a gradual decline in tenant numbers on east-coast lowland estates which were producing grain commercially. This process would have taken the form of the creation of single-tenant farms from multiple-tenant farms and a decline in the number of tenants on multiple-tenant farms as holdings were enlarged and consolidated.

Evidence for this can be obtained from Aberdeenshire by comparing early seventeenth-century rentals which give the number of tenants per farm with the 1696 poll-lists. For other areas, comparisons are only possible where two rentals which list both farms and tenants are available for the earlier and later parts of the seventeenth century. Unfortunately, this is relatively uncommon. However, evidence of both types has been studied and the results are shown in Table 7.2.

The analysis is complicated by the difficulty of tracing every holding on an estate between widely spaced rentals. Sometimes differences in the names of holdings make comparability uncertain, and some rentals are fragmentary. Nevertheless, the fortunes of a fairly high percentage of farms can be traced from one rental to another or from Aberdeenshire rentals to the poll-lists of 1696.

TABLE 7.2 CHANGES IN TENANT NUMBERS

Estate	County	Dates	CONSOLIDATION	
			Consolidation to single-tenant farms	Consolidation within multiple-tenant framework
Aboyne	Aberdeen	1600-1696	0%	0%
Brechin	Angus	1634-1694	38	37
Carmyllie	Angus	1622-1692	30	10
Fiddes	Aberdeen	1552-1696	50	0
Forbes	Aberdeen	1552-1696	35	29
Huntly	Aberdeen	1600-1696	38	16
Kellie	Angus	1678-1707	13	5
Panmure	Angus	1622-1692	11	16
Penicuik	Midlothian	1646-1684	0	25
Skene	Aberdeen	1639-1696	43	0

Estate	NO CHANGE		FRAGMENTATION
	Single-tenant no change	Multiple-tenant no change	Increased number of tenants
Aboyne	50%	0%	50%
Brechin	0	25	0
Carmyllie	55	5	0
Fiddes	50	0	0
Forbes	29	0	7
Huntly	23	14	9
Kellie	72	5	5
Panmure	38	28	7
Penicuik	58	17	0
Skene	43	14	0

Table 7.2 shows the extent to which the tenant structure has changed on estates where such material is available. It can be seen that on most of the estates, substantial percentages of the farms underwent reductions in the numbers of tenants. Many holdings on former multiple-tenant farms were consolidated to form new large single-tenant farms. In other cases, the number of tenants was reduced within a multiple-tenant framework. In many instances, the number of tenants was reduced from four or six to two. On such farms it is likely that many of the tenants of the new larger holdings would have had to rely upon the labour of sub-tenants and servants for working the land.

It is interesting to note the single exception to this pattern, the Aboyne estates. Many of the farms on these estates were situated in the upland parishes of Birse and Glentinar, which had very high percentages of multiple-tenant farms in the 1696 poll-lists. It appears that in this pastoral area, holdings were being increasingly subdivided rather than consolidated during the course of the seventeenth century. The contrast with the processes occurring on estates in lowland arable areas is pronounced.

Once again, the sample which has been used is small. It is particularly unfortunate that there is not more information on developments in the east-coast lowlands south of the Tay. Suitable rentals are not available for estates in these areas. Dodgshon's work on Berwickshire and Roxburghshire for the early eighteenth century suggests that similar trends were operating in this area however (31). Nevertheless, as far as it goes, the analysis supports the theory that the tenant structure of farms in the

31. Dodgshon R.A. (1969) *op.cit.* p.21

arable areas of the eastern lowlands was changing during the seventeenth century. There was increasing consolidation of holdings and a reduction in the numbers of tenants per farm leading, presumably, to the creation of more efficient working units. Over periods of sixty years or more, the changes were sometimes quite marked.

It can be seen that in many parts of eastern Lowland Scotland the predominant type of organisational unit in agriculture was the single-tenant farm. The steading on such holdings would have consisted of the farmhouse itself surrounded by a cluster of sub-tenants' and servants' quarters. Such a unit might superficially resemble the ferm-toun of the traditional multiple-tenant farm but in reality its organisation was totally different. In such areas the principal change which occurred during the Agricultural Revolution in the late eighteenth and early nineteenth centuries must have been the increasing demotion of sub-tenants into landless labourers by the incorporation of their smallholdings into the land of the principal tenant. The ferm-touns of many large multiple-tenant farms in arable areas may have possessed the appearance of a community which depended upon co-operative effort. However, the evidence for the size of households in the poll-lists mentioned above, and the information on holding sizes presented below, suggest that large numbers of the holdings on such farms were worked separately without recourse to co-operative farming.

The Agricultural Revolution in Scotland has been viewed as having caused a considerable amount of social upheaval (32). In the light of this study, its effects in the field of farm-structure appear to have been more

32. Hamilton H. (1963) *op.cit.* pp.204-209

restricted than has previously been believed. By the late seventeenth century, the organisation of agrarian society in the arable areas of Lowland Scotland had been substantially altered from the old system of multiple-tenant farms to one which facilitated commercial production. The Agricultural Revolution only modified this social structure in the grain-producing areas and extended its influence into other farming regions. In arable areas the main contribution of the Agricultural Revolution in terms of farm structure must have been the consolidation and enclosure of arable land.

In some upland areas, the effects of the Agricultural Revolution must have been more marked, with the replacement of the traditional multiple-tenant farm of up to ten or twelve tenants by single-tenant farms and the enclosure of the hill pasture into discrete units belonging to each farm. The reorganisation of some of these areas, principally those on the fringes of the Highlands, came later and led to a considerable displacement of population (33).

There are some indications that the multiple-tenant farm, with large numbers of tenants, was more closely associated with the fringes of the Highlands than with other upland pastoral areas of Scotland. Along the margins of the Highlands, life was more turbulent than elsewhere in Lowland Scotland during the seventeenth century (34). There was still a need to maintain as large a number of tenants on the land as possible. They could be called out to protect the interests of the proprietor in purely local disputes (35), or to support a political cause in full-scale

33. Smout T.C. (1969) *op.cit.* pp.328-337

34. *Ibid.* pp.204-209

war (36). This must be borne in mind when considering the tenant-structure of farms in such areas as Upper Deeside in the late seventeenth century. In this area, the last great political upheaval in which the feuars and tenantry were called out to support their feudal superior in the field, the Jacobite rebellion of 1715, still lay in the future (37).

In the Southern Uplands however, the situation was different. This area had been relatively peaceful since the Union of 1603 at least, and the parts which were more distant from the Border had probably been quiet since the mid-sixteenth century. In this area, the old multiple-tenant farms, if they had ever existed, had by the seventeenth century given way to large sheep farms. The size of these cannot be measured in acres and their productivity in terms of the old "merkland" system of measurement is of doubtful value as will be discussed below. Nevertheless, the rent paid and the returns of teind sheep on estates such as those of the Queensberry, Crawford and Buccleuch families (38), provide a crude indication of farm and holding size. Although multiple-tenant farms did occur on such estates, the number of tenants on each rarely exceeded four and was frequently less. This contrasts sharply with the farms with eight, ten or twelve tenants which frequently occurred on estates such as those of Mar, Strathbran and Grandtully bordering the Highlands.

35. For example, the dispute between the Earl of Mar and the Laird of Invercauld over grazing rights in 1705 (The Records of Invercauld ed. Michie J.G. New Spalding Club (1901) pp.117-118)

36. Mackie J.D. A History of Scotland (1964) pp.268-269

37. Ibid.

38. S.R.O. Buccleuch muniments GD 224 519 (1710), 943 1 (1625)
S.R.O. Hamilton muniments GD 237 201 (1638)

7.3 THE CONSOLIDATION OF HOLDINGS AND THE DIVISION OF RUNRIG

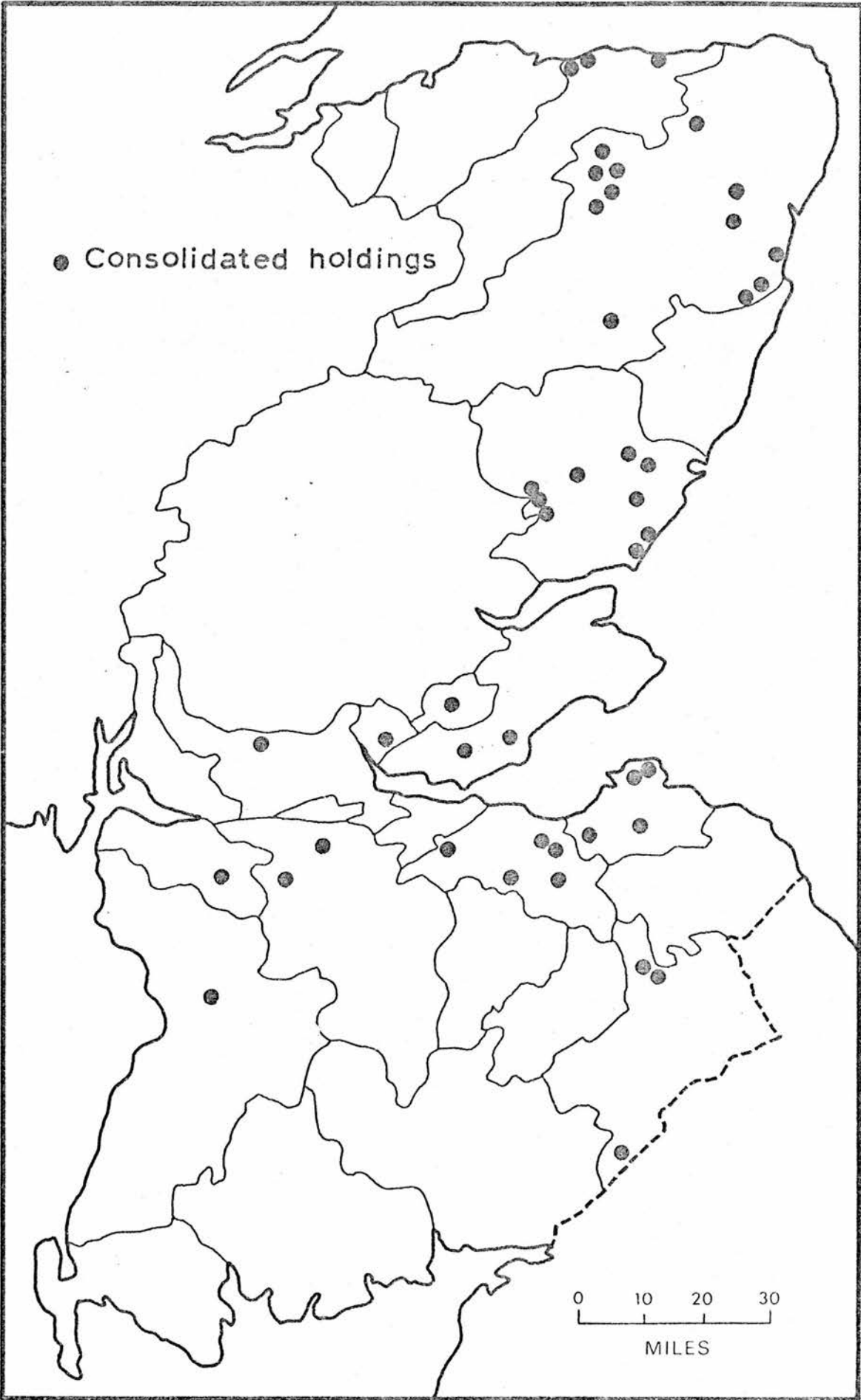
The occurrence of single-tenant farms in many parts of Lowland Scotland in the later seventeenth century implies that the fragmentation of holdings in runrig cannot have been so universally prevalent as has sometimes been thought. Runrig may be viewed as operating at three levels: tenant runrig within farms, tenant runrig between farms, and proprietary runrig (39). It is clear that the development of a large number of single-tenant farms in the arable areas of Lowland Scotland would have greatly reduced the amount of tenant runrig within farms. However, there is evidence to indicate that consolidation of this sort was not the prerogative of these farms alone. Many rentals and tacks, when referring to particular shares of multiple-tenant farms, used designations which make it clear that these holdings were sufficiently consolidated to possess their own geographical identity.

For instance, in a rental of the barony of Kingoldrum on the Airlie estates in Angus in 1692, the farm of Meikle Kenny was described as being set to three tenants. William Ogilvie, the baillie, held "the east pleuch" (ploughgate), a second tenant held "the pleuch nixt the forsaied baillie's pleuch", while a third held "the two nethermost pleuchs" (40). This indicates that each ploughgate was largely, if not wholly, a consolidated unit. Other instances of such descriptions have been plotted on Map 7.4. It is clear that most of the known examples were situated in

39. This is an amplification of the distinction made by Dodgshon R.A. (1969) *op.cit.* p.62

40. S.R.O. Airlie muniments GD 16 30 11 (1692)

MAP 7.4 REFERENCES TO CONSOLIDATED HOLDINGS



east-coast areas which from their rent structures (see Map 8.1) concentrated upon grain production. The total number of such holdings is fairly small although there are sometimes several on one estate. However, it can be suggested that the use of such locational prefixes was largely a matter of chance. For the purposes of the tack or rental, it must have been immaterial in many cases whether the fraction of the farm was located with reference to the compass or not. Thus, the number of known consolidated holdings on multiple-tenant farms shown on Map 7.4 may well have been only a small proportion of the ones which existed at this time.

It may be objected that consolidation out of tenant runrig on a multiple-tenant farm would inevitably have resulted in differences in fertility between the new holdings. Such inequalities should have been reflected in differences in rents between holdings of equal size on the same farm. These should have made it imperative for the particular fraction of a farm to have been located precisely in tacks and rentals. By this argument, the examples which have been plotted on Map 7.4 ought to have been the only consolidated holdings upon the estates concerned.

This does not appear to have been the case. When holdings were consolidated in this way, the rent per unit area remained the same. In the example on the Airlie estates mentioned above, each ploughgate in Meikle Kenny paid 17 bolls of bere as the principal rent regardless of its location (41). The other examples which are drawn from rentals where the rents for each consolidated fraction of the multiple-tenant farm are given, show the same pattern. Presumably in such cases the advantages

41. S.R.O. Airlie muniments GD 16 30 11 (1692)

of possessing a consolidated holding must have greatly outweighed the disadvantages resulting from the same rent per unit area being charged for each share of the farm. This was a notable departure from the old communal system of equality in quality and quantity which lay at the root of the runrig system.

This evidence supports the ideas presented above that many of the holdings on multiple-tenant farms in the grain-producing areas of Lowland Scotland were virtually self-contained units with regard to labour. Such holdings were cultivated with the aid of sub-tenants and servants and there was no need for co-operation with other tenants. The evidence for consolidation indicates that many holdings on farms of this type must have possessed distinct geographical identities. It will be shown below that the size of many of these holdings must also have precluded communal work.

The description of these holdings in poll-lists and rentals as being shares in one farm, rather than individual farms in their own right, suggests that they may have possessed some basic unity. This could have resulted if the farmsteads of the tenants with their attendant clusters of sub-tenants' houses were grouped together in touns. However, the evidence which has been presented above, and which will be considered below, suggests that such a grouping had no essential purpose relative to the need for co-operative labour between under-capitalised tenants. One possible advantage may have been the avoidance of the wasteful duplication of facilities. The survival of the ferm-toun on such farms may well have been related more to inertia or a desire to be sociable than to a need for mutual co-operation. One of the principal achievements of the

Agricultural Revolution in terms of farm structure must have been the dispersal of these touns. However, it is clear that on many farms the splitting up of the actual holdings had taken place by the start of the eighteenth century.

Little can be said regarding the actual processes of consolidation, either within a multiple-tenant framework or into single-tenant farms. The consolidation of tenant runrig could have been carried out without difficulty whenever the proprietor desired, and it would not necessarily have left any documentary evidence behind. The most significant reference to the consolidation of land out of tenant runrig survives among the Biel muniments (42). In 1607, the tenants of Ancrum in Roxburghshire petitioned their proprietor for the consolidation of their outfield lands from runrig. They claimed "that thay war greatlie dampnified ... in their outfeild lands in respect that thay lay rinrig" (43). The lands were appointed to be divided by the baillie, so that every tenant had the same acreage as before but in a compact block. The importance of this reference lies in the fact that it was the tenants themselves who described runrig as detrimental and who were agitating for its removal. It has been previously assumed that because the runrig system was designed to ensure fairness to the tenants within a system of multiple-tenant farms and co-operative farming, that they would automatically have seen it as desirable. Yet here we have an example, at a fairly early date, of tenants actually requesting consolidation as an aid to the more efficient working of their land.

42. S.R.O. Biel muniments GD 6 1020 (1607)

43. S.R.O. Biel muniments GD 6 1020 (1607)

As Map 7.5 shows, only two other clear examples of the consolidation of tenant runrig during the seventeenth century are known. However, the process of consolidation is likely to have proceeded quietly. Any upheavals which it may have caused were unlikely to have been of sufficient moment to have been recorded in documentary sources. The evidence for the consolidation of land within multiple-tenant farms and the widespread reduction of tenant numbers discussed above may be taken as indirect evidence of the removal of tenant runrig.

The situation with regard to proprietary runrig was different. Prior to the 1695 Division of Runrig Act (see Chapter 2), proprietary runrig could only be divided if all the parties concerned were in agreement. Even then, the process would have had to be carefully executed and recorded to ensure that the interests of each proprietor were respected. As Map 7.5 shows, the number of known divisions of proprietary runrig is not large. The situation with regard to the survival of documentary evidence is different from that of tenant runrig however. There was every reason to record the removal of proprietary runrig carefully as there was more at stake than at the tenant level. Consequently, it may be suggested that the paucity of references to the consolidation of land from proprietary runrig reflects an actual reluctance on the part of proprietors to undertake such divisions.

In order to understand the reasons for this, it is worth considering one of the known examples of division proceedings in detail. In 1596, the court book of the barony of Monymail, in North Fife, recorded that the feuars of Letham desired to consolidate their holdings out of proprietary runrig "but hurt or prejudice to any of thame gif thai can persuaid

themselffis to agrie uniformlie upon the said divisione" (44). This attempt appears to have failed, for in 1608 the court book mentioned that the feuars met for the purpose of agreeing to a division of the runrig lands. They appointed arbiters to undertake the work and agreed to abide by their decisions. The discussions dragged on for another two years, but a division finally appears to have been made by 1610. However, in 1611 and 1612, fines were imposed by the baron court for the contravention of the agreement. Some people had managed to acquire more than their allotted share of the land and it was decided to start all over again to ensure fairness. This division did not succeed either; in 1628 the lands were still in runrig and another attempt was appointed to be made. This was also a failure for the lands were still in runrig in 1684 (45).

This example may not be entirely typical in that one of the holdings in Letham was possessed as mains by the proprietor, Sir Robert Melville, the feudal superior of the other seven feuars (46). Some of the division proceedings appear to have been instigated by Melville, and the series of failures may have been due to deliberate sabotage on the part of the feuars who resented the heavy hand of their superior.

Nevertheless, this example gives some indications of the difficulties which could arise when such a large number of people had a stake in the lands which were to be consolidated. Most of the other known examples of the division of proprietary runrig involved only two parties. In such cases, agreement would have been much easier.

The number of known instances of the consolidation of proprietary

44. S.R.O. Leven muniments GD 16 2 1

45. Ibid. 5 633 (1684)

46. Ibid.

runrig prior to the 1695 act is small in comparison to the number of divisions of commonty which are known to have taken place (see Chapters 1 and 4). One possible reason for the reluctance to divide proprietary runrig compared to the attitude towards commonties may have been the relative value of the lands which were involved. Commonty would have varied in the quality of its pasturage, and at its division it might have proved difficult to allocate each proprietor's compact share with an equal distribution of good and bad grazing. However, land in commonty would have been of relatively low value per acre and such differences must have proved unimportant in relation to the advantages which would have been obtained from division and enclosure. This would have applied particularly if the reason for the division was to allow an expansion of the arable area, for this would have greatly increased the potential value of the divided land. In the case of a division of proprietary runrig however, slight discrepancies in the allocation of the land with regard to quality would have prejudiced the proprietor concerned to a much greater degree. This would have occurred because the land was of far higher value per acre than commonty. Also, the advantages of consolidation may not have been as immediately obvious as the advantages of dividing commonty. These influences could have caused reluctance to remove proprietary runrig until developments in the economy and the availability of capital made the advantages more evident.

7.4 HOLDING SIZE

So far, discussion of farm-structure and consolidation has proceeded without any specific reference to the size of the holdings involved. In the case of single-tenant farms where a tenant worked his land with the aid of sub-tenants and servants, it has been assumed that the size of the holdings involved must have been substantial. This assumption has also been made for the multiple-tenant farms in arable areas where a similar social organisation occurred. It remains to demonstrate this as far as possible.

A consideration of holding size is particularly important in relation to the need for mutual co-operation in the major agricultural operations. The standard model of the multiple-tenant farm involved two, four or perhaps eight small-tenants who were individually too poor to afford the ploughteam of eight oxen which was considered necessary for cultivation. Such tenants would have to pool their animals to form a ploughteam and would have undertaken the work of ploughing communally. The amount of land which each tenant could keep in cultivation would have been directly proportional to the number of oxen which he could supply. The major agricultural operations were done communally. This resulted partly from the inability of any individual tenant to provide enough labour to undertake these tasks alone, and partly because the fragmented pattern of landholding imposed by communal farming dictated it.

The ancient measure of arable land in Scotland was the ploughgate, or the amount of land which could be kept in cultivation in a year by a

ploughteam of eight oxen (47). The ploughgate was divided into eight oxgangs or oxgates, a unit of land which contributed one ox to the common ploughteam (48). Traditionally, the ploughgate extended to 104 Scots acres or about 130 English acres. The oxgang was 13 Scots acres or about 16 English acres (49).

The ploughgate was the standard system of land measurement throughout the eastern lowlands of Scotland. In the west, the Highlands and parts of the Borders, a different system of measurement by value rather than acreage was used. This indicated the less important role of arable land in the economies of such areas. McKerral considered that the system had originated in the feudal practice of granting land in return for the services of a knight (50). The merkland, the standard measure in this system (a merk being £0.13.4 Scots) was supposedly the amount of land which was assessed to pay one merk, or a thirtieth of a knight's fee (51). The original assessment, known as the "Old Extent" was traditionally thought to have been undertaken during the reign of Alexander III in the late thirteenth century (52). The system had become used for land measurement by the fourteenth century (53). At this time three merklands, or a forty-shilling land were equivalent to a ploughgate in value though not necessarily in acreage (54).

47. S.N.D. Ploughgate

48. S.N.D. Oxgang

49. S.N.D. Ploughgate and Oxgang

50. McKerral A. Ancient Denominations of Agricultural Land in Scotland P.S.A.S. LXXVIII 1943-44 p.60

51. Ibid.

52. Kerr R. General View of the Agriculture of the County of Berwick (1809) p.63

53. McKerral A. (1943-44) op.cit. p.60

54. Ibid. p.62

There is no suggestion that this state of comparability was maintained. McKerrall considered that the depreciation of the Scottish coinage upset the balance to an unknown degree (55). Even without the effects of inflation, the retention of the Old Extent assessments as late as the seventeenth century, as attested in many tacks and rentals (56), would not have made allowance for changes in the value of the land. The expansion of arable for instance would have significantly increased the value of a holding. This would not have been reflected, however, in the Old Extent valuation, which would have remained unchanged. Thus there was a lack of comparability between the merkland and the ploughgate by the seventeenth century, and it is equally difficult to compare the value of holdings within the merkland system. Because of this, it has been decided to exclude from the present study any analysis of rentals in which land was measured in this way. This is regrettable, as it prevents a large part of Lowland Scotland from being considered. However, a much more detailed investigation into the origins and development of the merkland system would be necessary before such an analysis would be meaningful.

*Work on metrology
by D. Hannaway*

The ploughgate was not necessarily constant everywhere. Third has suggested, for instance, that in Strathmore at the beginning of the eighteenth century, the ploughgate may only have extended to about 80-85 English acres (57). At the end of the eighteenth century, the ploughgate in West Lothian extended to about 70 English acres (58).

55. McKerrall A. (1943-44) op.cit. p.60

56. Eg. The Caldwell Papers Maitland Club (1854) p.300

Macfarlane's Geographical Collections S.H.S. (1908) II p.2

57. Third B.M.W. (1953) op.cit. p.335

It might be expected that the ploughgate would have been smaller in more fertile districts or where heavy soils predominated. However, although variations of this type must be allowed for, it is the relative rather than the absolute size of the ploughgate which matters in connection with the necessity for co-operation in farming among the tenants of multiple-tenant farms.

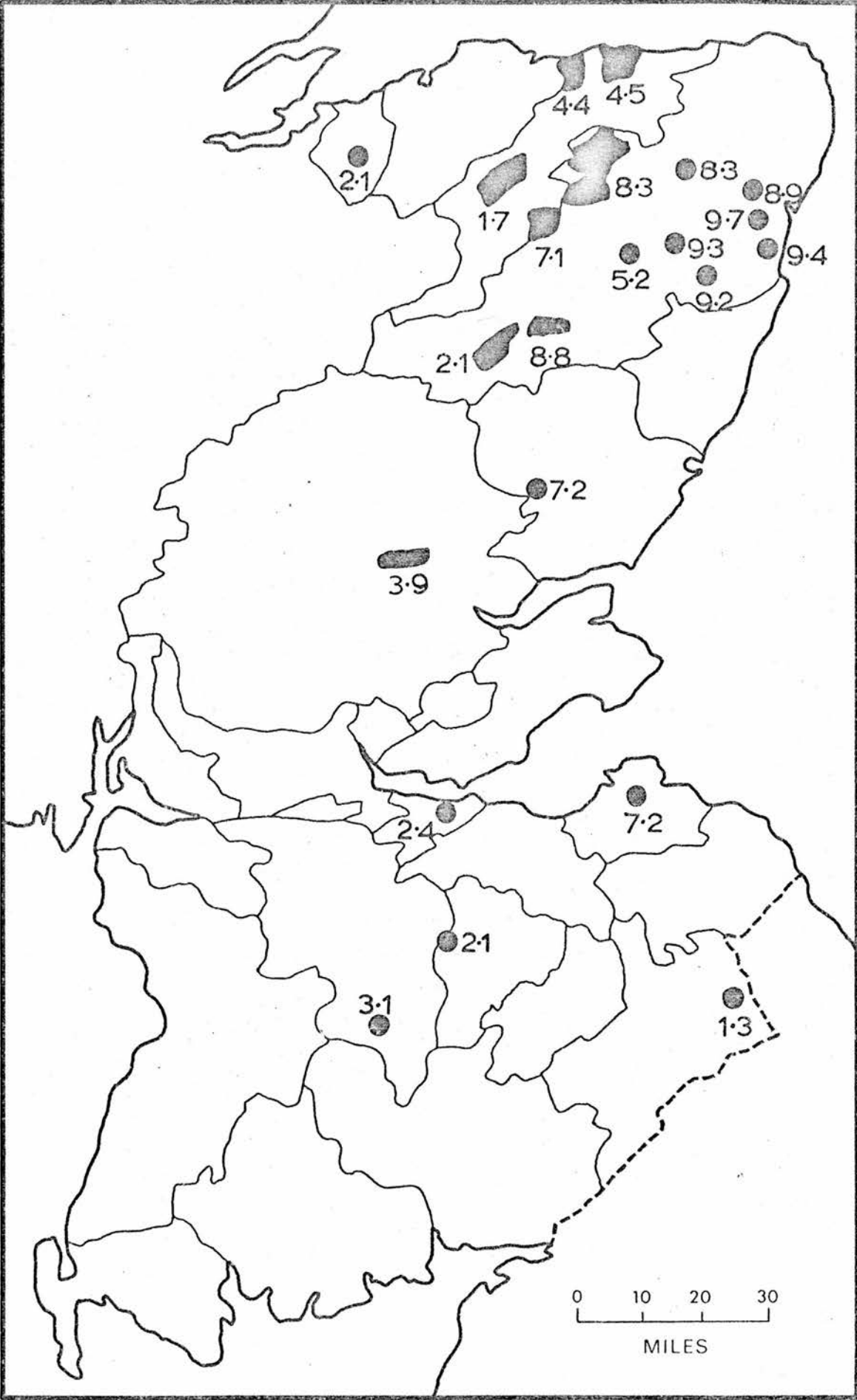
Relatively few rentals give the size of holdings. The estates for which information is available have been plotted on Map 7.6. Unfortunately, most of the data relate to the North-Eastern Lowlands. Some rentals for the Merse and Roxburghshire have been excluded because of their use of the husbandland, nominally two oxgangs, as a unit of measurement. A recent study by Dogshon of certain communities of feuars on former church lands in this area has suggested that by the beginning of the eighteenth century, the husbandland had ceased to have any real meaning as a measure of land and did not refer to a fixed acreage (59). This appears to have been very much a special case however. It has been assumed that in the mapped examples, which relate to the holdings of tenants, not feuars, oxgates and ploughgates refer to an approximately uniform acreage on each individual estate.

In Map 7.6 the mean size of holdings in oxgates has been calculated for each estate. It is clear that the mean holding size was very much larger in lowland areas, where arable farming predominated, than in upland pastoral areas. This is what one would have expected: the measure

58. Trotter J. General View of the Agriculture of the County of West Lothian (1794) p.28

59. Dodgshon R.A. The Nature and Development of Infield/Outfield in Scotland Trans.Inst.Brig.Geog.59 (1973) pp.1-23

MAP 7-6 AVERAGE SIZE OF HOLDINGS IN OXGATES



is one of arable land and the quantity held by each tenant would naturally have been smaller in upland valleys than in lowland areas. What is most significant about the mean holding sizes in lowland areas however, is that apart from a couple of exceptions, the mean is close to or actually exceeds eight oxgangs or one ploughgate. Many of the individual holdings extended to two or even four ploughgates.

By definition, holdings of this size must have been self-sufficient units which had to be worked without any help from neighbouring tenants. A holding of this size would have required the exclusive use of a plough and ploughteam for the whole year. This would have meant that the tenant of such a holding would have had to have been sufficiently wealthy to have supplied the team himself, unless he received some help from the proprietor in the form of steelbow animals. In the last chapter it has been suggested that the granting of steelbow goods, including plough oxen, was relatively uncommon. The tenant would not have been able to have co-operated with other tenants in ploughing as his own ploughteam would have been fully occupied on his land. As a result, he would have been forced to have kept the necessary manpower for ploughing, and other activities in which the tenants of smaller holdings normally pooled their labour, on his own holding. This would have resulted in the employment of hired servants, and the subletting of small parcels of his holding to cottars in return for the generous provision of labour services.

Thus the widespread possession by tenants of holdings in excess of one ploughgate would have resulted in a social structure which worked on the principle of each holding operating as a self-contained unit with regard to inputs of labour. This conclusion, together with the evidence

for the widespread occurrence of single-tenant farms in the arable areas of the eastern lowlands is such an important one relative to the organisation of agrarian society that it is worth looking at the evidence for holdings of one ploughgate or more in greater detail to discover how they were related to single and multiple-tenant farms.

When the rentals in which the mean holding size was one ploughgate or more are examined closely, it appears that such holdings are found on multiple-tenant farms as well as on single-tenant farms. Indeed, Table 7.3 shows that on many of the estates concerned, the majority of holdings of this size occurred within a multiple-tenant framework.

When the multiple-tenant farms on these estates are considered, it can be seen that the percentage of them which consisted entirely of holdings of less than one ploughgate is invariably small. These were the only farms where it is reasonable to suppose that co-operation in the main agricultural operations must have been essential for all the tenants. On those farms where some tenants held more than a ploughgate and others less, co-operation must have been restricted to the tenants of the smaller holdings, and the larger ones must have operated virtually independently. On those multiple-tenant farms where all holdings were larger than one ploughgate, a high percentage of the total as can be seen from Table 7.3, mutual co-operation must have been very limited if it existed at all. Perhaps the only activity in which the tenants on such farms operated together was the grazing of livestock on the stubble after harvest.

TABLE 7.3 ANALYSIS OF HOLDINGS OF ONE PLOUGHGATE AND LARGER

Estate	County	Date	% of tenants with holdings 1 ploughgate or larger	% of arable land in hands of these tenants
Belhelvie	Aberdeen	1699	77	89
Fiddes	Aberdeen	1617	100	100
Fyvie	Aberdeen	1705	73	84
Haddo	Aberdeen	1660	90	97
Huntly	Aberdeen	1679	57	80
Inchmarnock	Aberdeen	1600	67	87
Lintrathen	Angus	1692	54	72
Puttachie	Aberdeen	1623	100	100
Skene	Aberdeen	1638	93	97
Traprain	East Lothian	1697	50	61

	% of tenants holding 1 ploughgate or more in single- tenant farms	% of tenants holding 1 ploughgate or more in multiple- tenant farms	% of multiple- tenant farms with 1 or more holdings 1 ploughgate or more	% of multiple- tenant farms with all holdings under 1 ploughgate
Belhelvie	-	-	-	-
Fiddes	30	70	100	0
Fyvie	26	74	66	34
Haddo	-	-	-	-
Huntly	53	47	75	25
Inchmarnock	89	11	67	33
Lintrathen	0	100	60	40
Puttachie	17	83	100	0
Skene	21	79	94	6
Traprain	-	-	-	-

Due to the layout of certain rentals
it was not possible to make a complete analysis

7.5 CONCLUSION

While it must be admitted that the evidence relating to farm structure, consolidation and holding size is heavily biased towards the North-East Lowlands, it seems reasonable to suppose that the ideas which have been discussed were more widely applicable to the eastern areas of Lowland Scotland where arable farming predominated. The evidence strongly suggests that in many parts of the eastern Lowlands, the traditional multiple-tenant farm occupied by a large number of tenants who co-operated to find the manpower and capital equipment with which to work their holdings was the exception rather than the rule.

In such areas this pattern had, by the seventeenth century, largely given way to holdings on single- and multiple-tenant farms which were so extensive that they could only be cultivated with the help of sub-tenants and servants. Such holdings were commonly of one, two or even four ploughgates and necessitated the full-time use of one or more plough-teams. Where these holdings were still organised as multiple-tenant farms, the continuation of the *ferm-toun* as a form of settlement was not necessary in terms of labour and social organisation. The character of the *ferm-toun* on such farms had changed from a cluster of houses belonging to several small tenants with relatively few sub-tenants' dwellings, to a smaller number of farmsteads each with its associated group of agricultural workers' houses. Consolidation of land out of tenant *runrig* appears to have made significant advances on both types of farm, further eroding the old communal farming practices.

In upland areas fringing the Highlands, a pattern of farms with large numbers of joint-tenants holding small plots of land and presumably working in close co-operation appears to have been more common. In contrast, the evidence suggests that large single-tenant farms were widespread in parts of the Borders. The difference may relate to the fact that the Highland margins were relatively backward economically compared to the pastoral areas of the Southern Uplands which were heavily involved in the droving trade by the end of the seventeenth century (see Chapter 4).

It is possible that the type of farm structure which was common on the borders of the Highlands had been standard at an earlier date in the arable areas of Lowland Scotland. The evidence for consolidation and the reduction of tenant numbers indicates that there was an element of dynamic change in seventeenth-century farm structure in Lowland Scotland. A model of sequential development can be postulated in which the traditional multiple-tenant farm was gradually replaced by ones with larger holdings which were either dispersed or further consolidated into single-tenant farms. The changes which have been shown to have taken place appear to have been related to an increasing desire to reorganise the farm-structures of arable areas, in order to increase the efficiency of the unit for commercial grain production.

It is clear that the farm-structures of many areas of Lowland Scotland in the seventeenth century were neither as primitive or as static as has been thought previously. The need for mutual co-operation between tenants, which has been seen as one of the major obstacles to individual initiative and agricultural improvement, does not appear to have been

very important in the areas which concentrated upon arable production.

The most developed farm-structures were not materially different in their organisation of labour from the farms which are generally supposed to have been introduced during the Agricultural Revolution. In the case of multiple-tenant farms with large holdings, the principal difference was the survival of a settlement pattern with some archaic features. It appears that the principal contribution of the Agricultural Revolution in this field was to continue the work of consolidation, and to introduce enclosure on a large scale in arable areas. The eighteenth and nineteenth centuries saw the spread of this type of farm-structure into other parts of Lowland Scotland. The developments in farm organisation in Lowland Scotland from the seventeenth century onwards appear as a slowly accelerating continuum. Many of the developments which blossomed in the eighteenth and nineteenth centuries appear to have done so due to basic groundwork which had been carried out, largely unrecorded, during the seventeenth century.

Agreed

PART IV

CHANGES IN MARKETING

CHAPTER VIII

THE MARKETING OF AGRICULTURAL PRODUCE

8.1 INTRODUCTION

One of the most significant indices of the state of an agrarian economy is the infra-structure by which agricultural produce is marketed.

Marketing imposes a major constraint upon an agrarian system for agriculture is only as efficient as the organisation for selling its products. This is inevitable because, outside (of) a purely subsistence economy, farmers have to sell their surplus produce in order to exist. If there are no suitable markets where the produce can be sold, then agriculture will remain in an undeveloped state and improvement will not be an economic proposition. This will also occur if the technology of transport is so poor that such markets are rendered inaccessible. Alternatively, improvements in marketing, whether in transport or in the distribution of market centres, might be expected to encourage an expansion of agriculture and to increase its commercial orientation.

The study of marketing is thus indispensable to a consideration of agriculture in general. Equally, the identification of changes in the structure of marketing is an important aspect of the study of agrarian change. The previous chapters have considered the evidence for widespread changes in many aspects of agriculture in Lowland Scotland during the seventeenth century. It follows from this that there should

have been a corresponding expansion of marketing. This problem can be considered as involving three major components: production, transfer, and consumption. In practice, this involves the examination of what was being produced and who was marketing it, the difficulties which were encountered in transporting the commodities, and the nature and distribution of the market centres. This chapter will concentrate upon these in turn in an attempt to build up an overall picture of the marketing of agricultural produce in seventeenth-century Lowland Scotland. One branch of marketing, the coastal grain trade, is thought to have been of such importance that a separate chapter has been devoted to it. This chapter will then discuss the changes which took place in the structure of marketing during the seventeenth century and will attempt to relate it to the evidence for agricultural improvement which has been reviewed in previous chapters.

8.2 RENTS AND RURAL MARKETING

Perhaps the best introduction to a study of marketing is by an examination of rents. Information relating to rents, in the form of tacks and rentals, is one of the most abundant categories of data which occurs among collections of estate papers. The distributions of different types of principal rent act as a guide to the nature of the produce which was marketed. From this, as will be shown, some conclusions may be made regarding the organisation of marketing.

The principal rent was the main body of the rent, whether in grain (ferme), money (mail), or a combination of both (1). It does not include

1. Smout T.C. *A History of the Scottish People 1560-1830* (1969) p.126

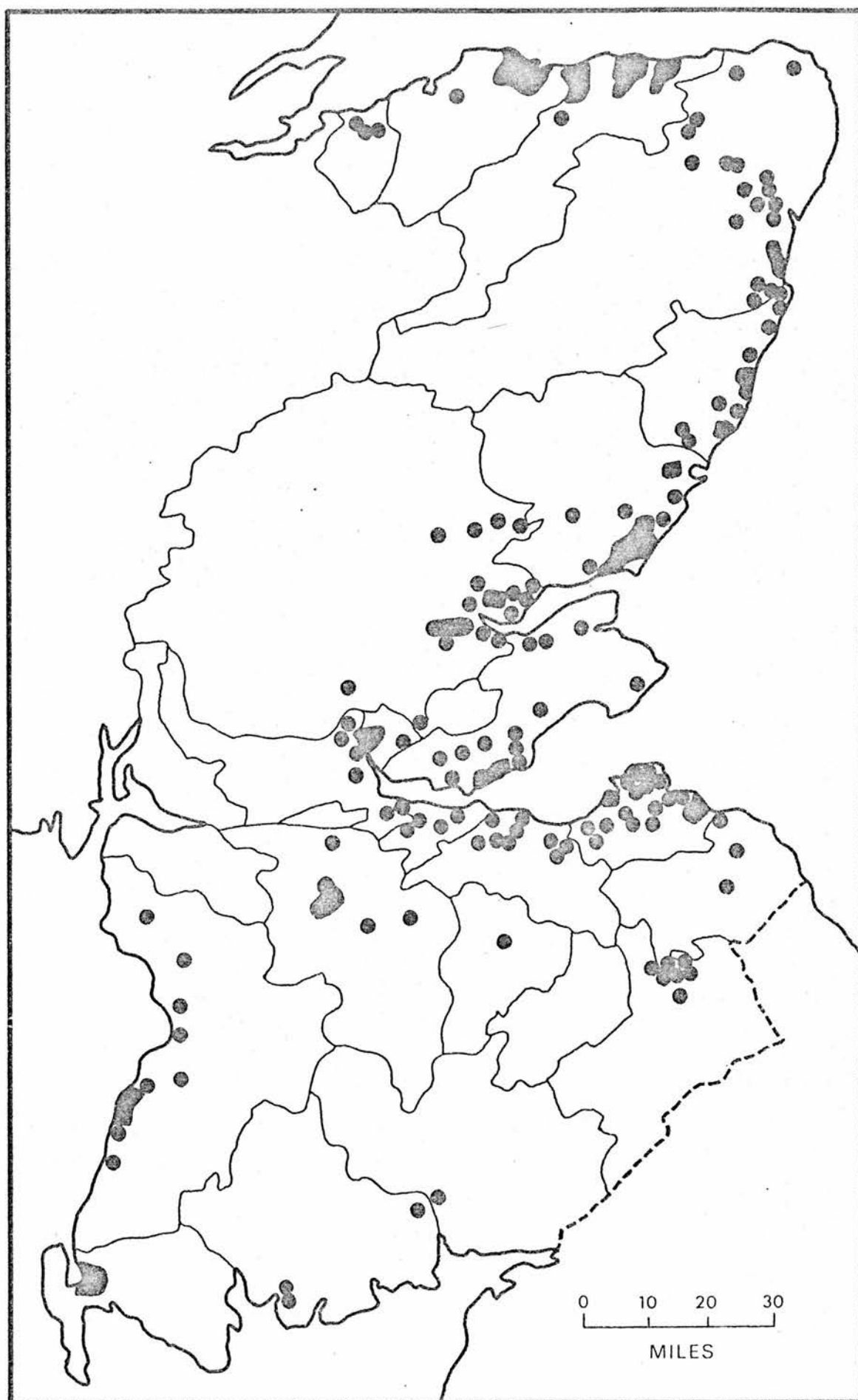
carriage and other labour services (ariage), and minor payments in kind (kains). Maps 8.1-8.3 show the distribution of the different categories of principal rent in seventeenth-century Lowland Scotland. In mapping these, care has been taken to include only farms in the analysis. Tacks of smallholdings where the character of the rent was unduly biased by the money rent paid for the houses and outbuildings have been omitted. Tacks which included specialised buildings such as mills and smithies have been excluded for the same reason.

It will be seen from Map 8.1 that the distribution of estates on which tenants paid their principal rents wholly in grain is dominantly an east-coast lowland one. Relatively few of the estates are situated far from the coast (the implications of this in relation to the coastal grain trade and to overland transport will be discussed in Chapter 9). Only a few estates lay outside the eastern lowlands, in the Central Tweed basin, North Lanarkshire, Central Ayrshire and the Solway Lowlands.

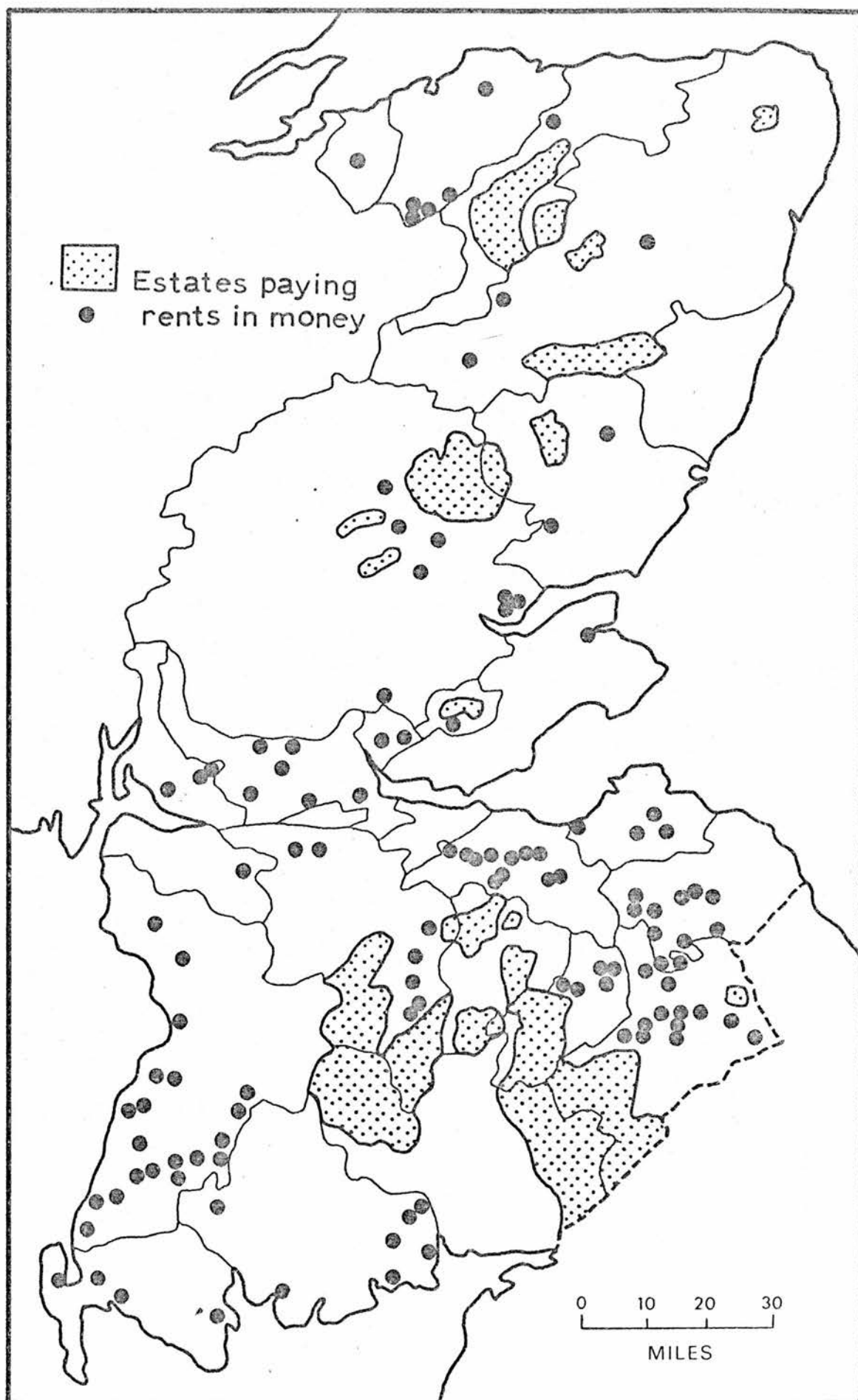
The distribution of estates where money was paid as the principal rent (Map 8.2) is more widespread. It is clear that this category is mainly related to upland areas and their fringes, or to the lowlands of the South West. The intermediate category, those estates whose tenants paid their principal rents partly in money and partly in grain (Map 8.3) tend to be characteristic of eastern lowland areas which were distant from the sea, of the fringes of the Highlands and the Southern Uplands, and of west-coast lowland areas.

Smout has stated that in the pre-improvement Scottish agrarian system, the principal rent of an estate was an indication of its economy (2).

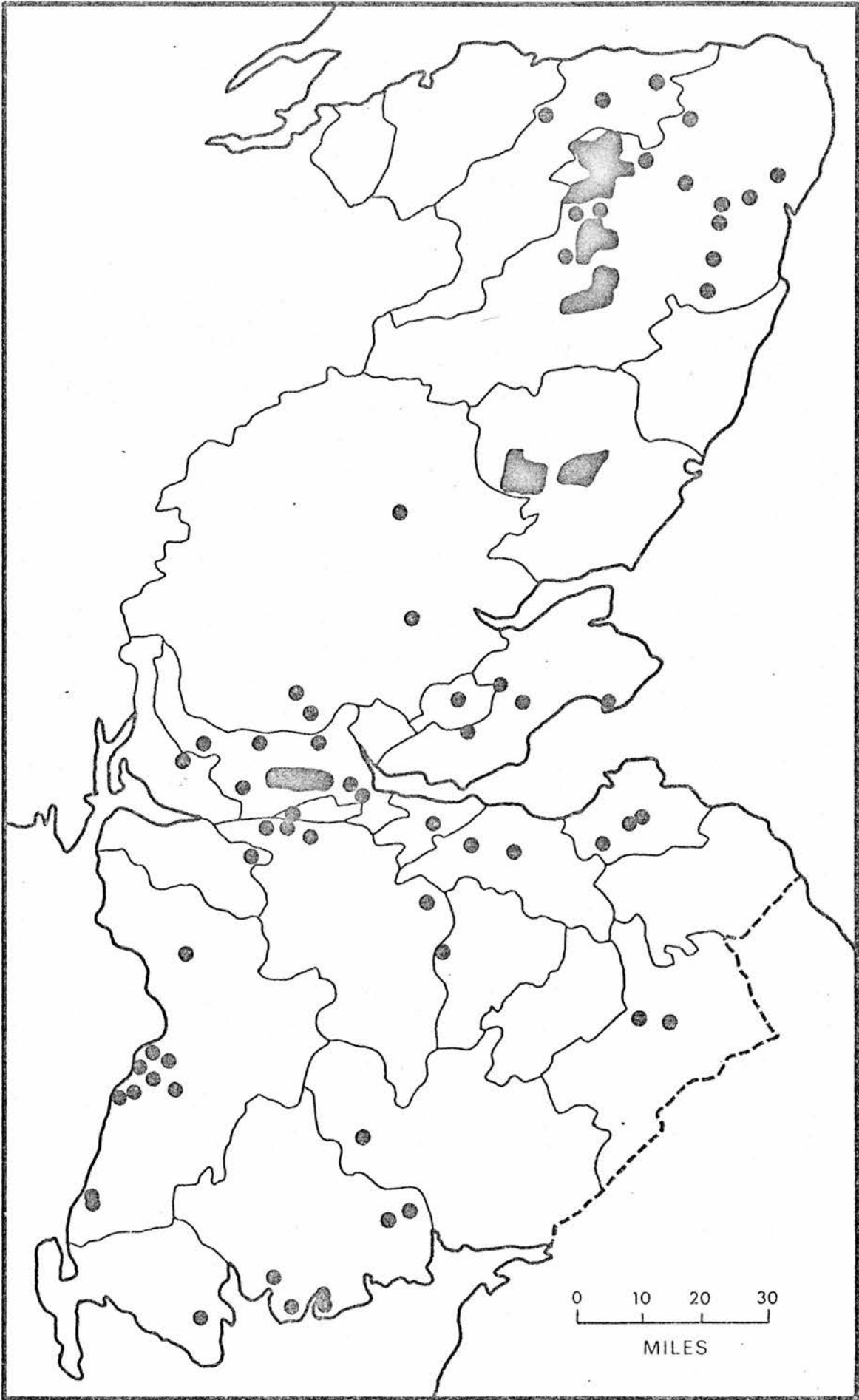
MAP 8.1 ESTATES PAYING RENTS IN GRAIN



MAP 8.2 ESTATES PAYING RENTS IN MONEY



MAP 8.3 ESTATES PAYING RENTS IN MONEY AND GRAIN



Estates on which rents were paid in grain tended to concentrate upon arable production and those where money was paid tended towards pastoral farming. The distributions of the different types of principal rents appear to support this. There is a close relationship between those areas where estates had their principal rents in grain and the regions of Lowland Scotland which were traditionally described as fertile. These were the areas which were noted for their concentration on grain production by sixteenth and seventeenth-century topographic writers (3). It is apparent for example, that no estates are recorded as paying their principal rents in grain in lowland areas such as the interior of Buchan, whose economy was traditionally pastoral (4). East-coast estates whose principal rents were in grain were almost all situated within the twelve mile hinterland which was involved with the coastal grain trade (see Chapter 9). For the western lowlands, information is not adequate for the same relationship to be demonstrated. However, the nearness to the coast of estates whose principal rents were paid in grain suggests that accessibility to coastal transport was important in this area too.

Estates where the principal rent was paid in money tended to be situated in areas which are known to have had a pastoral economy, such

3. The most important of these sources are:

Hector Boece *The Boundis of Albioun* (1527) in Brown P.H.

Early Descriptions of Scotland (1893) pp.62-104

George Buchanan *Description of Scotland* (1582) in Brown P.H.

Scotland Before 1700 (1893) pp.220-231

Bishop Leslie *History of Scotland* (1578) in Brown P.H. *Early*

Descriptions of Scotland (1893) pp.115-173

William Lithgow *Description of Scotland* (1628) in Brown P.H.

Early Descriptions of Scotland (1893) pp.295-302

John Major *Description of Scotland* (1521) in Brown P.H.

Scotland Before 1700 (1893) pp.44-61

4. Boece H. (1527) *op.cit.* p.76; Buchanan G. (1582) *op.cit.* p.229;

Leslie B. (1578) *op.cit.* p.145

as the Borders (5) and Galloway (6). It includes upland areas which were so deficient in grain that they had to import it from neighbouring lowlands (7). It also includes the South-Western Lowlands where cattle rearing for the droving trade had assumed major importance by the end of the century (see Chapter 6). A few examples occur in the Eastern Lowlands however. The significance of these, particularly the ones in the Lothians, will be discussed below.

Estates whose principal rents were paid partly in money and partly in grain tended to occur in western lowland areas which were less suited to a predominantly arable economy (8), to the fringes of upland areas where one would naturally expect mixed farming to be practised, or to eastern lowland areas such as Central Aberdeenshire which may have been physically capable of concentrating upon arable production but which were too distant from the coast to participate in the grain trade due to the limitations imposed by overland transport (see Chapter 9).

However, the distribution of the different types of principal rent should not be considered as necessarily static. It is clear that Smout, in making the generalisation referred to above, has failed to take into account the trend towards the commutation of grain rents to money which gathered momentum throughout the seventeenth century. This trend provides an explanation for the few anomalies in Map 8.2 and will be considered below. In order to understand the pattern of principal rents

5. Leslie B. (1578) *op.cit.* p.118

6. Buchanan G. (1582) *op.cit.* p.220; Leslie B. (1578) *op.cit.* p.118; Lithgow W. (1628) *op.cit.* p.296

7. For example, the trade in grain from Central Aberdeenshire into Upper Speyside which is recorded in S.R.O. Gordon muniments GD 44 74

8. Buchanan G. (1582) *op.cit.* p.222

more clearly, it is necessary to consider the economy of seventeenth-century Scotland in more general terms.

The seventeenth-century Scottish economy functioned by means of money (9). The country may have been short of bullion and the coinage in circulation may have originated in half the countries of Europe (10), but money was the standard, indispensable medium of exchange. This can be illustrated by almost any set of personal, household, or estate accounts (11). There is no indication that bartering was practised other than on a limited scale among the rural population and within the semi-enclosed communities of estates.

It would thus be necessary for the proprietor of an estate to have his income substantially in money or, at some point, to convert a greater or lesser proportion of his income in kind into money. It would not have been necessary to convert all the rent in kind. Proprietors relied upon the services of their tenants for the cultivation of their home farm, for the supply of their fuel, and for all manner of carriage services which would doubtless have cost them more if they had been forced to hire the labour. Also, as overland transport was slow and difficult, it was logical that a proprietor and his family should attempt to live, as far as possible, off the produce of their estates. A proprietor who lived on his estate for the whole or part of the year might require a considerable quantity of provisions for maintaining his household (12). Apart from grain, this produce was provided by the tenants' kail rents. Most estates of moderate size

9. Lythe S.G.E. *The Economy of Scotland in its European Setting 1550-1625* (1960) p.100

10. *Ibid.* p.99

11. For example, see the published *Account Book of Sir John Foulis of Ravelston 1674-1707* ed. Hallan A.W. S.H.S. (1894)

which included within their bounds both upland and lowland country could provide beef, mutton, lamb, pork, chicken, duck, wildfowl, fish, eggs, butter, cheese and honey (13). The tenants would deliver the produce to the kitchen door as part of their services. The estate policies would provide pigeons, rabbits, fruit and vegetables.

It would have served no useful purpose for a proprietor to convert all his kain produce to money. It would probably have been more expensive to buy the commodities at the nearest market and transport them to the estate. If the kains greatly exceeded the requirements of the household however, a proprietor might have been better advised to convert some of them to a money payment rather than to try and sell such a diversity of produce (14). This must have become increasingly common during the seventeenth century as the size of households diminished with the decline of the need to maintain large followings of retainers (15).

However, apart from the kain produce and a quantity of grain for the household and for paying estate officers, labourers and servants whose wages were wholly or partly in grain (16), a proprietor would ultimately have required his income in money. When this is considered in relation to the distribution of the different types of principal rent, one fundamental conclusion emerges. Tenants on estates in pastoral areas paid their

12. For instance, in 1683 the Earl of Panmure's household consumed 68 bolls of wheat, 50 bolls of bere and 308 bolls of meal
S.R.O. Dalhousie muniments GD 45 18 77 (1683)

13. This can be demonstrated from many estate rentals and accounts, eg. S.R.O. Airlie muniments GD 16 30 11, or S.R.O. Dalhousie muniments GD 45 18 6 (1622)

14. Though this was certainly done in some cases. Eg. the Crawford estates: S.R.O. Hamilton muniments GD 237 200/2

15. Smout T.C. and Fenton A. *Scottish Agriculture Before the Improvers - An Exploration* Ag.H.R. XIII (1963) p.78

16. Eg. S.R.O. Dalhousie muniments GD 45 18 21 (1642)

principal rents in money. It follows from this that they must have converted their produce to money themselves; that is, they did their own marketing. Tenants in arable areas paid their principal rents in grain. Therefore the proprietors of estates in these areas must have converted the produce to money by marketing it themselves. The possible reasons for this basic difference in the pattern of marketing will be considered below.

8.3 TRANSPORT AND MARKETING

The differences between the principal rents in arable and pastoral areas which have been noted above may well have been related to the relative difficulty of transporting the commodities which those areas produced as surpluses. Tenants in pastoral areas might have been better able to market their produce themselves. Their surpluses were either self-transportable, in the form of live animals, or of high value in relation to their weight and bulk, like wool and hides. This may well have been sufficient to have more than offset the fact that rural market centres were more sparsely distributed in pastoral areas than in arable areas, as will be considered presently.

There is little direct evidence among estate papers relating to the marketing of produce by tenants. This is hardly surprising, as there would be little occasion for such references. Nevertheless, there are two chance references in the Buccleuch muniments which indicate that it was the normal practice for the tenants of Liddesdale to market their own wool, and presumably other produce as well (17).

17. S.R.O. Buccleuch muniments GD 224 935 3 49 (1693), 935 2 (1690)

This ties in with the wider evidence which is available from the exchequer records. Accounts are available for the customs precincts which lay adjacent to the English Border. These records are mainly concerned with goods which were imported and exported by land. An examination of them indicates that while much of the produce which was exported to England crossed the Border in bulk, a substantial proportion of it did so in small batches. Much of the trade was in live animals or animal products as the economy of much of the area adjacent to the Border was pastoral. Table 8.1 shows the export trade in cattle and sheep from the South Borders precinct (18) between 1680 and 1691. The importance of the small-scale trade in relative terms is clear, although in absolute numbers the large droves of livestock were clearly more important. Two types of marketing are represented: large-scale marketing by proprietors from Nothsdale, Galloway, Ettrick Forest and the Highlands, and small-scale trading. That the latter was mainly local is suggested by the very scale of the operations and by the surnames of the people who paid the customs dues. Many of them were Scotts, Elliots and Armstrongs (19), surnames which were common in Liddesdale, Eskdale and Teviotdale, but which were probably infrequent elsewhere (20). This local traffic appears to have represented the marketing of produce by tenants, and suggests that it was a common practice in this area. Presumably this would have been true of other areas with a similar economy.

18. S.R.O. Exchequer Records Second series E 72 2 1-23

19. Ibid.

20. Fraser G.M. *The Steel Bonnets: The Anglo-Scottish Border*
Reivers (1971)

TABLE 8.1 SIZE OF DROVES CROSSING THE BORDER TO ENGLAND,
SOUTH BORDERS PRECINCT

CATTLE

Customs year 1 Nov.-31 Oct.	Size of droves (percentages)				
	1-10	11-25	26-50	51-100	101+
1680-81	38	10	14	14	24
1681-82	33	10	15	5	37
1682-83	48	5	10	8	29
1683-84	53	8	6	8	25
1684-85	37	12	14	12	25
1685-86	37	8	11	10	34
1688-89	40	12	6	12	30
1689-90	49	5	5	12	29
1690-91	67	9	8	5	11

SHEEP

Customs year 1 Nov.-31 Oct.	Size of droves (percentages)			
	1-25	26-50	51-100	101+
1680-81	53	21	15	11
1681-82	37	24	20	19
1682-83	44	22	12	22
1683-84	51	20	11	18
1684-84	44	19	13	24
1685-86	34	24	15	27
1688-89	50	30	10	10
1689-90	32	39	19	10
1690-91	41	22	25	12

Tenants in pastoral areas would have had little difficulty in marketing live animals. These could be driven with ease over country which would be impossible for carts and difficult for heavily laden pack-horses. By analogy with later droving practices, animals could probably have been moved more than a dozen miles a day without too much difficulty (21).

Animal products such as wool and hides were of high value in relation to their weight compared with grain. For instance, wool commonly fetched between £4 and £4.13.4 Scots per stone (22), a price roughly equivalent to that of a boll of meal in an average year (23). A boll of meal at the standard Linlithgow measure weighed 112 lbs Troy weight (24). Thus, wool was approximately eight times as valuable as meal per unit weight. A valuable consignment of wool might have been carried upon a couple of pack-horses, while the equivalent value in grain would have needed more time or greater animal resources to move it over the same distance.

When the value of live animals is compared to that of grain, the contrast is even greater. A large plough-ox in good condition might have fetched between £40 and £56 Scots, a young nolt for fattening, £15-£20 Scots, and a wether about £5 Scots (25). Any of these animals would have

21. Haldane A.R.B. *The Drove Roads of Scotland* (1952) p.36

22. S.R.O. Hamilton muniments GD 237 201

S.R.O. Buccleuch muniments GD 224 932 4

23. For example, see the prices quoted for the sale of grain in the Panmure estate accounts (S.R.O. Dalhousie muniments GD 45 18), or the analysis of fiars prices in Michison R. *The Movement of Scottish Corn Prices in the Seventeenth Century and Eighteenth Century* Ec.H.R. XVIII (1965) pp.278-287

24. A.P.S. X (1696) p.346

25. S.R.O. Hamilton muniments GD 237 201

S.R.O. Buccleuch muniments GD 224 932 4

been more easily transported than their equivalent value in grain: about half a ton in the case of a well-fed ox.

It is also possible that tenants in pastoral areas had more time available for marketing their produce than their counterparts in arable areas. Pastoral farming traditionally involved less work for the farmer than arable farming (26). If the tenants had lived in remote hill areas, they would have been less likely to have been liable to render the time-consuming labour services which were the common lot of tenants in arable districts (27), where estates tended to be smaller and the mains and mansion house closer at hand. This would have been particularly true of large fragmented estates like those of the Douglas and Buccleuch families. Tenants in pastoral areas would have had comparatively small acreages under crop (28). Tending these crops in summer, harvesting them in autumn and ploughing and harrowing them in spring would have occupied proportionally less time than for the tenants of large arable farms. It is clear from the exchequer records for the Border precincts that most of the traffic in livestock and animal products occurred between May and October (29), a busy period on arable farms.

A tenant of a ploughgate of land which was mainly arable might have paid between 20 and 40 bolls of grain as his principal rent, equivalent to perhaps 1-2 tons (30). Such a tenant might well have lacked the time,

26. For instance, O.S.A. VI 275

27. Tenants on the Buccleuch estates do not appear to have performed any ariage services and were only liable for occasional carriage services.

28. This is evident from the small quantities of grain paid in teinds by tenants on the Buccleuch estates in Ettrick Forest and Teviotdale (S.R.O. Buccleuch muniments GD 224 943 (1625))

29. S.R.O. Exchequer Records E 72 2 1-23

30. Eg. S.R.O. Forbes muniments GD 52 387

manpower and resources for carrying such a quantity of grain to a market centre in his own time, even allowing for the fact that market centres tended to be more closely spaced than in pastoral areas.

It might be maintained that tenants of farms in lowland areas would have been better able to have used wheeled transport for marketing their produce. Carts were in common use in parts of Lowland Scotland at this time, contrary to the suggestions of some writers (31). On some estates, most tenants owned at least one cart (32), and some inventories indicate that many owned two (33). These were not always the ramshackle vehicles with square wheels and rotating axles that Handley has envisaged as being standard (34). Some at least can be demonstrated to have had spoked wheels with iron rims and proper axles (35), though it is not certain how prevalent this type was (36). Carts appear to have been used for the carriage of bulk commodities such as slate, peat, coal, lime or stone over fairly short distances, or for leading in the harvest (37). However, as will be discussed in Chapter 9, they were

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31. J. Dodds in his introduction to *The Diary and Expenditure Book of William Cunningham of Craigends* S.H.S. (1887) went so far as to state that "wheeled vehicles had not come into use on farms" at this time (the 1670s)
 32. Tenants in the barony of Panmure owned 24 carts between them in 1622 (S.R.O. Dalhousie muniments GD 45 18 6 (1622)); the tenants of Newbattle owned 21 carts in 1683 (R.P.C. 3rd series XI (1683) 301)
 33. Inventories of tenants' goods on the Thornton estates in East Lothian indicate that many tenants owned two carts in the 1680s (S.R.O. Biel muniments GD 6 1633, 1534, 1535, 1536)
 34. Handley J.E. *Scottish Farming in the Eighteenth Century* (1953), p.29
 35. Eg. S.R.O. Dalhousie muniments GD 45 18 23 (1644) and S.R.O. Leven muniments GD 26 668 (1698)
 36. Most of the references are in estate accounts and refer to the proprietor's vehicles. However, some references to spoked and rimmed wheels on tenants' carts exist, eg. S.R.O. Leven muniments GD 26 668

not widely used for marketing grain. This probably relates to the fact that grain was normally required to be delivered, as part of the tenants' carriage services, during the winter months (38), a difficult time for employing wheeled transport on unmade roads. This was the one time of the year when the tenants of arable holdings were relatively unoccupied and free from other services. Pack-horses, carrying about 1-2 bolls per load (39) were usual. Thus, lowland areas do not appear to have gained any advantages from easier topography.

It appears then, that tenants in arable areas had greater difficulty in marketing the produce which formed the major part of their surplus and from which, directly or indirectly, their principal rent had to be found. It was logical for them to pay their rents in grain and let the proprietor deal with the problem of converting it into money by marketing it on a larger scale than they were able to operate on. In practice, as will be shown in Chapter 9, most tenants carried the grain which constituted their principal rent to market centres for the proprietor. This was done as part of their carriage services but the marketing was handled by the proprietor. The tenants did this at a slack period of the year in time which was the proprietor's rather than their own.

Landowners had great advantages over their tenants with regard to the marketing of a bulky commodity like grain. They could draw on greater resources of time, labour, organisation and capital (see Chapter 9).

37. Eg. S.R.O. Hay of Yester muniments GD 28 2139
 S.R.O. Dalhousie muniments GD 45 18 1618 (1690)
 R.P.C. 3rd series IX (1684) 152

38. Between Christmas and Candlemas (February 2nd) was standard in tacks

39. S.R.O. Morton muniments GD 150 2012 (1664)

Proprietors operated within a social framework in which news relating to the state of the grain market, received by letter from estate officers, agents, or members of the family, was disseminated more rapidly than among the tenantry. It is clear that they could operate more effectively and on a larger scale than the tenants who had only limited time and resources to spare from their main preoccupation of working their holdings. This situation was unlikely to change unless there was a marked improvement in the communications network or the marketing system.

This may have been the principal reason for the retention of grain rents on most east-coast estates during the seventeenth century. The structure of the coastal grain trade (see Chapter 9) appears to have suited the requirements of a small number of proprietors selling grain in bulk. It was also geared to transport by sea, and to the purchase of the grain by a small number of merchants in the larger burghs. It is difficult to see how the widespread marketing of grain by individual tenants could have been accommodated within the system as it stood. Many objections were levelled against the practice of paying rents in grain rather than money, both by contemporary and later writers. Towards the end of the seventeenth century, Andrew Fletcher of Saltoun claimed that ...

"Our management in the countries cultivated by tillage is much worse (than that of pastoral areas) because the tenant pays his rent in grain ... which is attended by many inconveniences and much greater disadvantages than a rent paid in money ... The carriage of corn paid for rent, to which many tenants are obliged, being often to remote places and at unseasonable times, destroys their horses and hinders

"their labour. And the hazard of sending the corn by sea
to the great towns endangers the loss of the whole." (40)

One can appreciate Saltoun's criticisms, especially the one about "unseasonable times". However, it is significant that he made no attempt to suggest an alternative to the payment of rents in grain. He left two important questions unanswered. If the tenants paid their rents in money rather than grain, how were they to sell their produce without transporting it to market in much the same way as they did for their landlord? How were the towns to be supplied if the grain was not shipped, when transport by sea was so much cheaper than overland carriage?

Given the economic conditions that existed in seventeenth-century Scotland, it is difficult to see how Saltoun could have answered these questions satisfactorily. It would not have been profitable to have improved communications to facilitate the marketing of grain overland unless economic conditions changed significantly. The greater part of the coastal grain trade was in the hands of a small number of merchants in a few large burghs. There was a dearth of small, local market centres where tenants could convert their grain surpluses to money. The merchants were small-scale operators by European standards (41), and they do not appear to have been sufficiently wealthy to have maintained agents in regional market centres like their Welsh counterparts (42). Such agents might have collected the consignments of individual tenants into

40. Andrew Fletcher of Saltoun Two Discourses Concerning the Affairs of Scotland (1698) Second Discourse pp.36-37

41. Smout T.C. Scottish Trade on the Eve of the Union (1963) p.80

42. Howells B.E. The Rural Economy of South West Wales During the Stuart Period Paper presented to the Institute of British Geographers Historical Geography Research Group, Aberystwyth, May 1973

sufficiently large cargoes for shipment. Merchants who operated on such a limited scale would have required a firm guarantee that a cargo was waiting before they sent out a vessel. A proprietor was in a much better position to make this guarantee than a number of tenants operating individually or collectively.

The principal exception to the pattern which has been described above occurred where estates were situated near a large burgh. Such towns were sufficiently large to provide good markets for grain in themselves rather than merely acting as entrepôts for the coastal grain trade. The landward hinterlands of some of the larger burghs, particularly Edinburgh, for the supply of grain, will be considered in Chapter 9. If an estate was situated within easy reach of such a market it made sense, from the proprietor's point of view, to convert the grain rents due from his tenants into money and let them market the grain themselves. In this way, the proprietor was saved the trouble of doing his own marketing. If the burgh was sufficiently large, the tenants would have had relatively little difficulty in disposing of their individual consignments. This process can be seen on the Clerk of Penicuik estates. The grain rents on these estates were converted to money at least as early as 1646 (43), although in 1654 such a course of action was stated to be unique in the Lothians (44). The same process can be seen operating at a slightly later date in the baronies of Elphinstone, Lasswade, Loanhead and Roslin, which were all within a similar distance of Edinburgh (45).

43. S.R.O. Clerk of Penicuik muniments GD 18 704 (1646)

44. Ibid. 707 (1654)

45. Ibid. 730 (1700), 714 (1667), and
S.R.O. Biel muniments GD 6 1681 (1662)

8.4 MARKET CENTRES

When the trade in agricultural produce in seventeenth-century Lowland Scotland is considered, there appear to have been three levels at which agricultural produce changed hands. The first and lowest level was the redistribution of produce within estates. This involved the sale by proprietors to their tenants of commodities which had been paid as rents in kind. This can be demonstrated to have been a frequent component of most estates' trading. It increased greatly in bad seasons to such an extent that sometimes all of an estate's rents in kind were re-absorbed in this way.

The second level of the hierarchy was the trade, on a wider scale, which took place through officially licenced market centres. In the earlier part of the century these were restricted to the burghs. This trade could be considered as having involved two main components. The first was an exchange between agriculturalists and the non-farming population. These were the craftsmen and specialists who earned their living by working or producing goods for money with which they bought the agricultural produce which they required. This is best illustrated by the trade which took place between the inhabitants of upland and lowland areas at market centres situated along the upland fringe (46).

The third and highest level of the hierarchy was the large-scale trade which was carried out between proprietors and the burghs or markets

46. For example, the trade from the Highlands to the Lowlands and vice versa through such centres as Perth and Dundee. Major J. (1521) *op.cit.*

outwith the country. This involved the greater part of the export trade in many commodities, such as grain and cattle. A considerable part of the requirements of the larger burghs was also met by this level of marketing.

There is abundant evidence testifying to the importance of the lowest level in the early part of the seventeenth century. It suggests an economic insularity in which estates were enclosed, largely self-supporting communities. Most sets of estate accounts which are available for the early seventeenth century indicate that a large proportion, sometimes all, of the produce paid in rent was sold back to the tenants. This applied to grain in arable areas but also to other kinds of produce. On the Buccleuch estates for instance, most of the live animals which were paid to the proprietor in teinds were sold back to the tenants who had paid them (47). The general impression is that, as the century progressed, the tendency to dispose of produce within the estate declined. This was presumably as a result of increases in production which reduced the need of tenants to buy food back the proprietor. This is illustrated in Table 8.2 which shows the quantities of grain sold to the tenants on the Panmure estates. These are the only estates where a nearly complete run of accounts is available (48). The fall in the sales of grain within the estate in the early 1640s is very marked, corresponding with a great increase in the quantity of grain sold to regional and national markets (see Chapter 9). Sales of grain remained at a fairly low level until the crisis of the later 1690s. More fragmentary evidence from other estates

47. Eg. S.R.O. Buccleuch muniments GD 224 942/2. These accounts for Ettrick Forest and Teviotdale are two of the many which indicate that most of the teind bere, meal, lambs, stirks, cheese and wool was sold back to the tenants on these estates.

48. S.R.O. Dalhousie muniments GD 45 18

TABLE 8.2 QUANTITIES OF GRAIN SOLD TO TENANTS ON THE
PANMURE ESTATES

<u>Crop year</u>	<u>Bolls</u>	<u>Crop year</u>	<u>Bolls</u>
1617	366	1641	1,209
1618	651	1642	190
1619	721	1643	289
1620	763	1644	80
1621	965	1645	101
1622	991	1646	96
-	-	1647	128
1626	1,006	-	-
1627	1,028	1649	64
1628	1,017	1650	61
1629	1,050	1651	101
1630	1,073	1652	64
1631	1,067	-	-
1632	1,009	1654	313+
1633	977	1655	58
1634	1,085	-	-
1635	1,100	1657	20
1636	1,075	1658	80
1637	1,064	1659	180
1638	798	1660	89
1639	240	-	-
1640	412	1662	20

TABLE 8.2 (sheet 2)

<u>Crop year</u>	<u>Bolls</u>	<u>Crop year</u>	<u>Bolls</u>
1663	302	1684	59
1664	228	1685	39
-	-	1686	71
1666	143+	1687	91
1667	175+	1688	125
1668	356	1689	316
1669	383	1690	148
1670	373	1691	252
1671	104	1692	177
1672	187	1693	346
1673	126	1694	539
1674	151	1695	775
1675	162	1696	950
1676	122	1697	512
1677	197	1698	1,648
1678	243	1699	1,018
1679	260	1700	347
1680	332	1701	670
1681	402	1702	630
1682	65+	1703	750
1683	18		

appears to confirm this trend (49).

This change was accompanied by an expansion in marketing at the highest level. The relative stagnation of the coastal trade in grain and the cattle droving trade with England in the early part of the century is evident. Their rapid expansion in the later part of the century is also manifest (see Chapters 4 and 9). They appear to have been symptomatic of a general expansion throughout the agrarian economy. What little evidence is available suggests that there was a comparable growth in other sectors of the economy, such as the wool trade (50).

The overall impression is that agriculture was becoming more commercialised and that marketing was adapting to meet new demands. It is now appropriate to consider the intermediate level of marketing and to determine whether there were corresponding changes in it during the seventeenth century. Such changes should have been related to the developments in agriculture which have been discussed in previous chapters and the trends in the other levels of marketing which have been considered above.

Evidence for an expansion of rural market centres in Lowland Scotland during the seventeenth century has been noted by previous authors (51), but it has never been considered in detail. The areal distribution of market centres has not been studied nor have the effects of changes in the density of market centres been assessed.

The term "market centre" is used specifically to mean places where

49. Eg. the Brechin estates (S.R.O. Dalhousie muniments GD 45 18 1350-64)

50. Smout T.C. (1963) *op.cit.* p.215

51. Mackenzie W. *The Scottish Burghs* (1949) p.93
Smout and Fenton (1965) *op.cit.* p.79

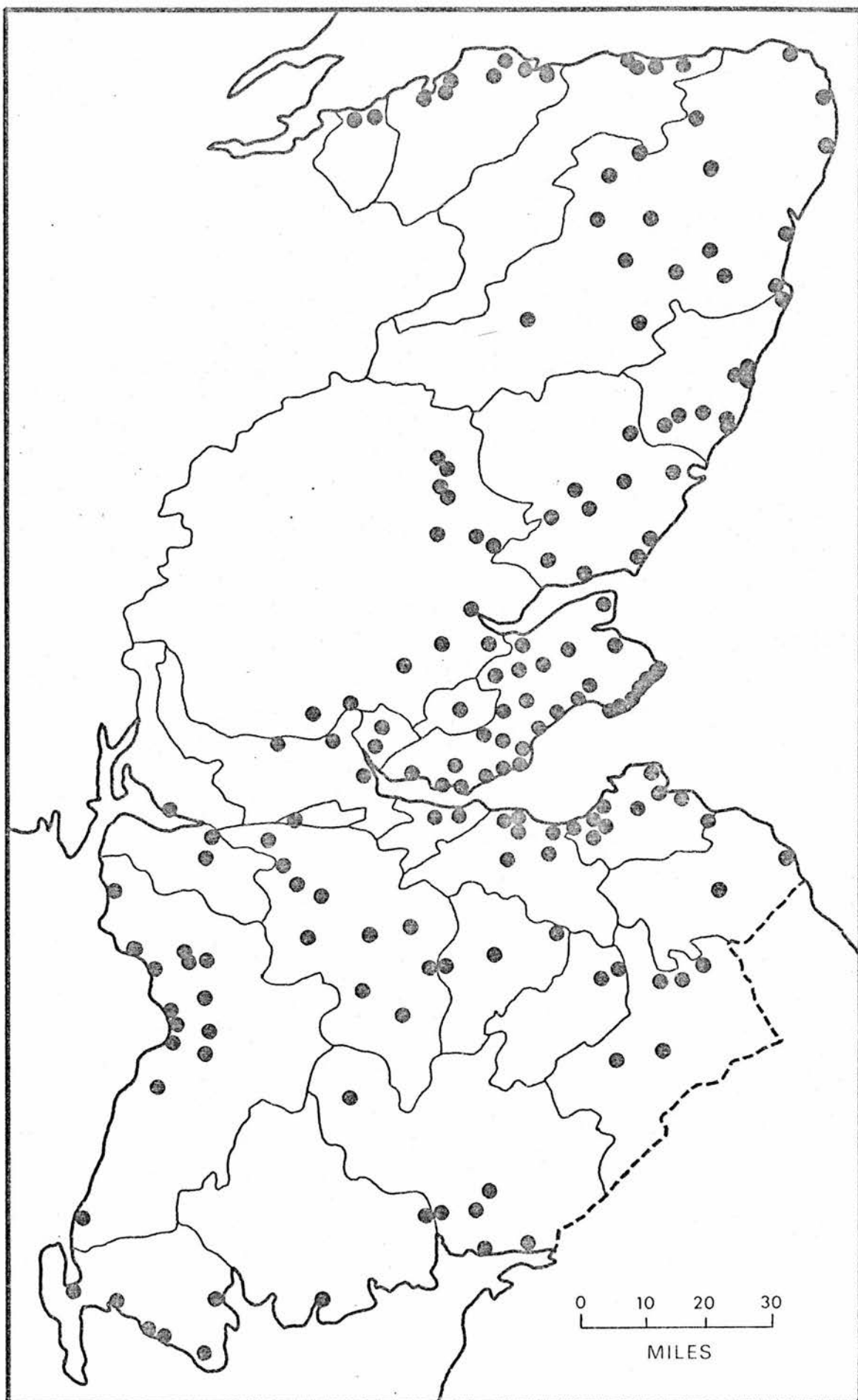
a weekly market and, in most cases, one or more annual fairs, were licensed by Parliament. This included royal burghs, burghs of barony and regality, and those sites which were authorised by Parliament but were not accorded burghal status. The importance of the weekly market and the periodic fair where goods, in most cases from a fairly local hinterland, were exchanged varied with the type and size of the centre.

Foreign trade made an important contribution to the economies of the larger royal burghs. Coastal burghs drew upon distant, even foreign, sources for many basic foodstuffs, such as grain (see Chapter 9). The larger burghs were also engaged in a variety of manufacturing and processing industries. All these activities would have diminished the relative importance of the weekly market for local produce as a source of revenue to the centre. However, in absolute terms, the markets of the major burghs must have been larger and should have supported wider hinterlands than smaller centres. In the burghs of barony and particularly non-burghal market centres, local trade in agricultural produce would have been relatively more important in the economy of the centre. In many cases, such trade would have been the very *raison d'être* of the settlement.

The growth of rural market centres in Lowland Scotland during the seventeenth century is illustrated by Maps 8.4-8.10 (52). Map 8.4 shows the distribution of market centres in 1600. It can be seen that the main concentration of burghs was eastern and coastal, centred around the estuaries of the Forth and Tay, extending northwards into Angus with a

52. The burghs have been mapped from the lists in Pryde G.S. *The Burghs of Scotland: a Critical List* (1965). Burghs which Pryde considered to have been 'parchment burghs' have been omitted. Non-burghal market centres have been extracted from the Acts of the Parliaments of Scotland

MAP 8.4 MARKET CENTRES IN 1600



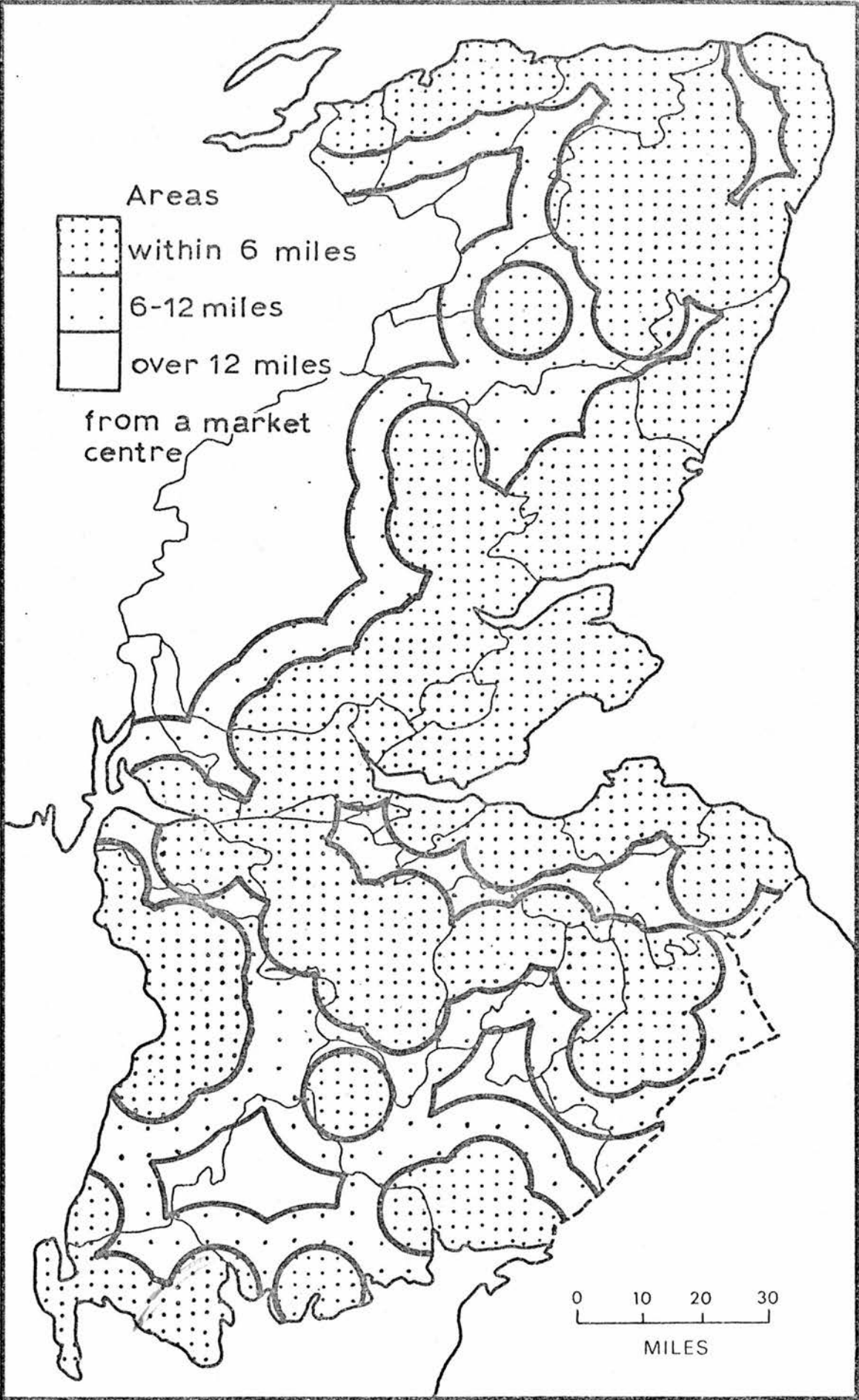
smaller nucleus on the Moray Firth coast. Outside these areas, Lowland Scotland was less well served. There was a thin scatter of market centres through Central Aberdeenshire, Lowland Ayrshire, Lanarkshire and the Merse, but elsewhere they were sparsely distributed.

However, in the context of market hinterlands, dot distributions can be visually misleading. An attempt has been made to assess the areal impact of these market centres by delimiting two hinterlands. The outer one shows those areas which were within twelve miles of a market centre. This figure has been used in an attempt to delimit an approximate distance beyond which it was not economic to transport most agricultural produce to a market. Twelve miles represented the limit beyond which it was not an economic proposition to market grain, as will be discussed in Chapter 9. It also approximates to the distance over which it was considered feasible to drive livestock in a day.

When this limit is plotted (Map 8.5), it can be seen that Lowland Scotland was not so badly served by market centres in 1600. Only the interior highlands of Perthshire and the North-Eastern counties, and the upland cores of Galloway and the Borders lay beyond this limit. Most of Lowland Scotland can be presumed to have had access to a market centre on this theoretical basis. However, the difficulty of a twelve mile journey to market would have varied with the topography. Straight-line distances on a map have less significance on the ground. Some of the areas within the twelve mile limit must still have been disadvantaged. Accordingly, a second hinterland within six miles of a market centre has been mapped to show the areas which were relatively well served with access to markets.

This limit indicates that Lowland Scotland was broken up into a series

MAP 8.5 ACCESS TO MARKET CENTRES 1600



of well-served core areas with intervening gaps. The east coast was effectively covered, with a few interesting exceptions, such as Buchan, a pastoral enclave among the Lowlands (53).

The six-mile hinterland did not penetrate very far into the interior of the North-East apart from some of the Angus glens. In the southern part of Lowland Scotland there was a series of disconnected core areas located in river basins: Central Ayrshire, Clydesdale, the Central Tweed basin and the Solway Lowlands. These were separated by areas of poor access which coincided with the intervening watersheds in many cases. The gap from Stirling to Berwickshire between the shores of the Forth and the Clyde/Tweed valleys is particularly noticeable.

The six-mile hinterland cannot be considered as any kind of an absolute measure, but the picture which it presents is probably not too far removed from reality. Lowland Scotland appears as a series of separate, almost closed systems in lowland arable areas with intervening areas of poor access corresponding to pastoral areas (compare Map 8.5 with Maps 8.1 and 8.2). The fragmented distribution of well-served areas points to a relative dearth of rural marketing at this level of the hierarchy, and suggests a pattern of regional self-sufficiency. This is in accordance with the evidence for activity at the lowest, and stagnation at the highest level. The conclusion must be that, outside the scattered core areas brought out in Map 8.5, the economy of much of Lowland Scotland at this time was basically a subsistence one with a minimum of regional specialisation.

53. Boece H. (1527) *op.cit.* p.76; Buchanan G. (1582) *op.cit.* p.229; Leslie B. (1578) *op.cit.* p.145

The reasons for this were doubtless complex but an important influence must surely have been the unsettled state of much of the country at the opening of the century. The Crown was just beginning to extend effective control into the more remote parts of the Lowlands. Until 1603, the Borders were still a frontier zone (54), although more peaceful than they had been a few decades earlier (55). Conditions along the edge of the Highlands were, if anything, worse (56). It was to be almost 150 years before the state established effective control over the Highland boundary zone and finally eradicated raiding into the Lowlands (57). The rest of Lowland Scotland was quiet by comparison, but instances of landowners taking the law into their own hands, rather than wait for the more lengthy processes of legal action, were not infrequent (58).

Map 8.6 shows that there was a marked increase in the number of market centres between 1600 and 1650. Sixty-four new burghs of barony were established throughout the Lowlands. Some new market centres were founded in east-coast areas, notably in East Stirlingshire and West Lothian where the coal and salt industries were expanding (59). However, there was a trend towards the creation of market centres away from the Eastern Lowlands in areas like Renfrewshire, North Ayrshire, Dumfriesshire and Wigtownshire.

54. Fraser G.M. (1971) *op.cit.*

55. Smout T.C. (1969) *op.cit.* p.97

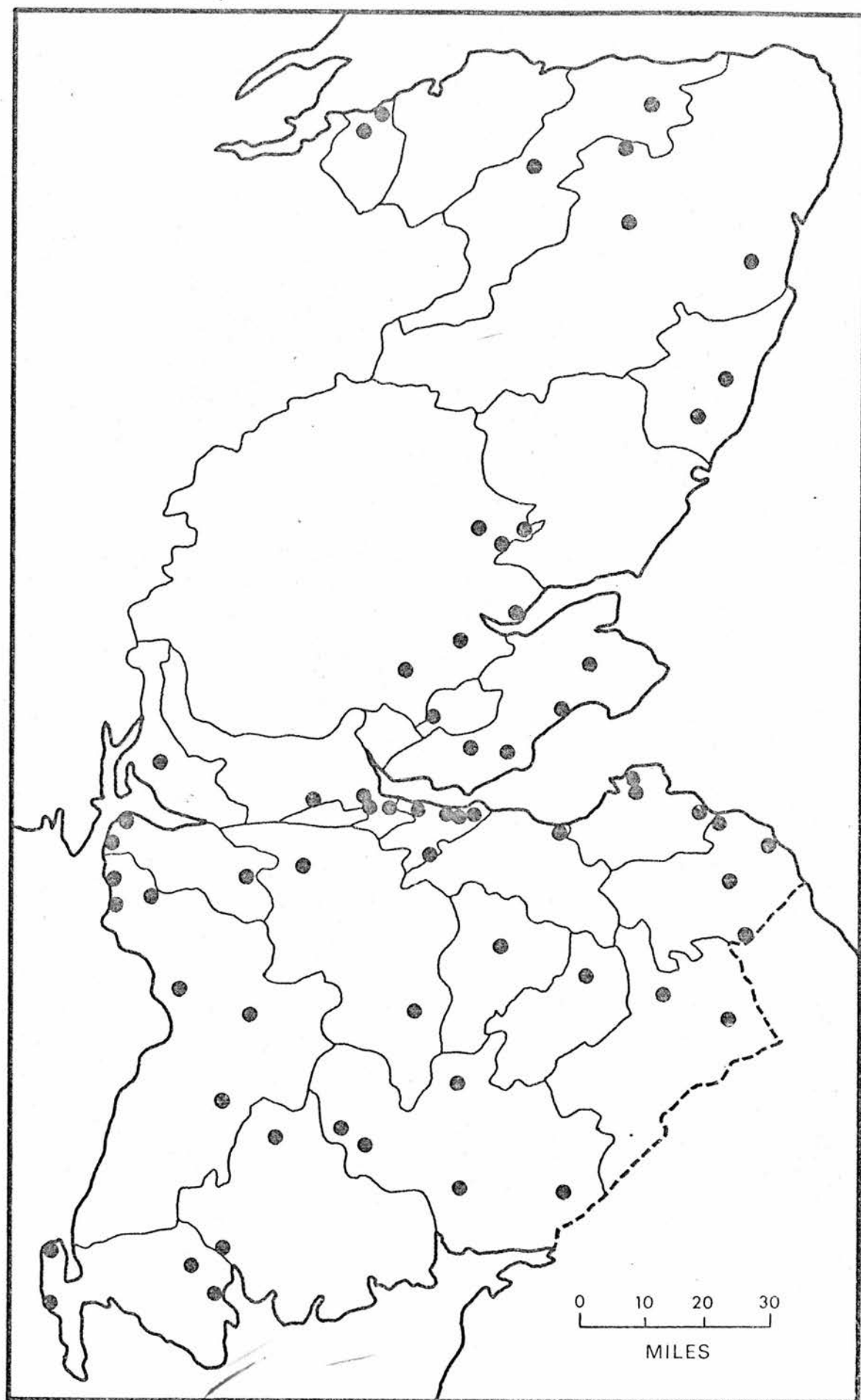
56. A glance at almost any volume of the Register of the Privy Council furnishes numerous examples of disturbances in this area.
Eg. R.P.C. 3rd series XVI (1691)

57. Smout T.C. (1969) *op.cit.* p.97

58. Eg. Fraser W. *Memoirs of the Maxwells of Pollock* (1874) II p.347;
Chronicle of Perth Maitland Club (1831) p.10 (1604)

59. Smout T.C. (1969) *op.cit.* pp.167-168

MAP 8.6 BURGHS OF BARONY ERECTED 1600-1650



Between 1650 and 1707 the number of new market centres increased more rapidly, particularly after the Restoration. Map 8.7 shows that 87 burghs of barony were created during this period. Again there was a tendency for many of the centres to be sited away from the east coast. With an expansion of market centres in Central Aberdeenshire and Perthshire, as well as the Solway Lowlands and Renfrewshire. However, the late seventeenth century is especially notable for the emergence of a new type of market centre, the market and/or fair, licensed by Parliament but not accorded burghal status. These had been virtually unknown before the Restoration, but between 1660 and 1707, about 150 of them were founded, 124 of which are shown on Map 8.8. It was not possible to locate the rest.

The tenor of many of the Acts of Parliament which established these non-burghal market centres indicates that they were designed to serve areas which were inconveniently distant from existing burghs. Many were set up in locations which were central to a sizeable hinterland, but whose actual site was merely a stretch of moorland or sand dunes (60). In 1663, Parliament approved the establishment of a weekly market and an annual fair at the Kirkton of Tarland, in Aberdeenshire. The act stated that ...

"ther is no burgh or mercat toun in the parochie of Tarlan ...

whereby the inhabitants of that part of the cuntrie are much

prejudged by goeing a great way to fairs and mercats .." (61)

Many other acts contained similar wording (62).

It appears that the setting up of these markets was not done solely

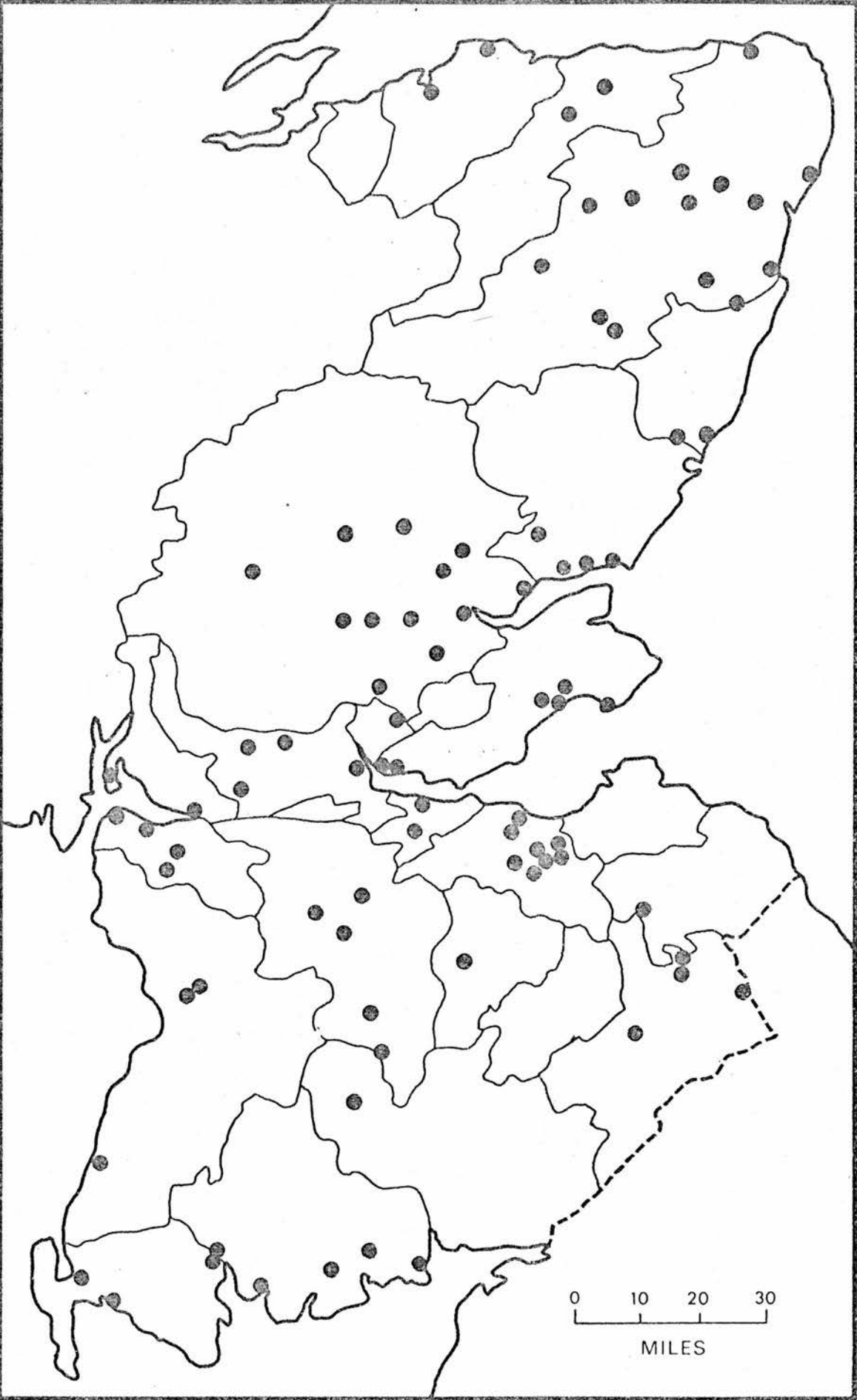
60. For example, the market which was set up on the moor of Whithills near Portsoy in Banffshire in 1681

A.P.S. VIII (1681) p.443

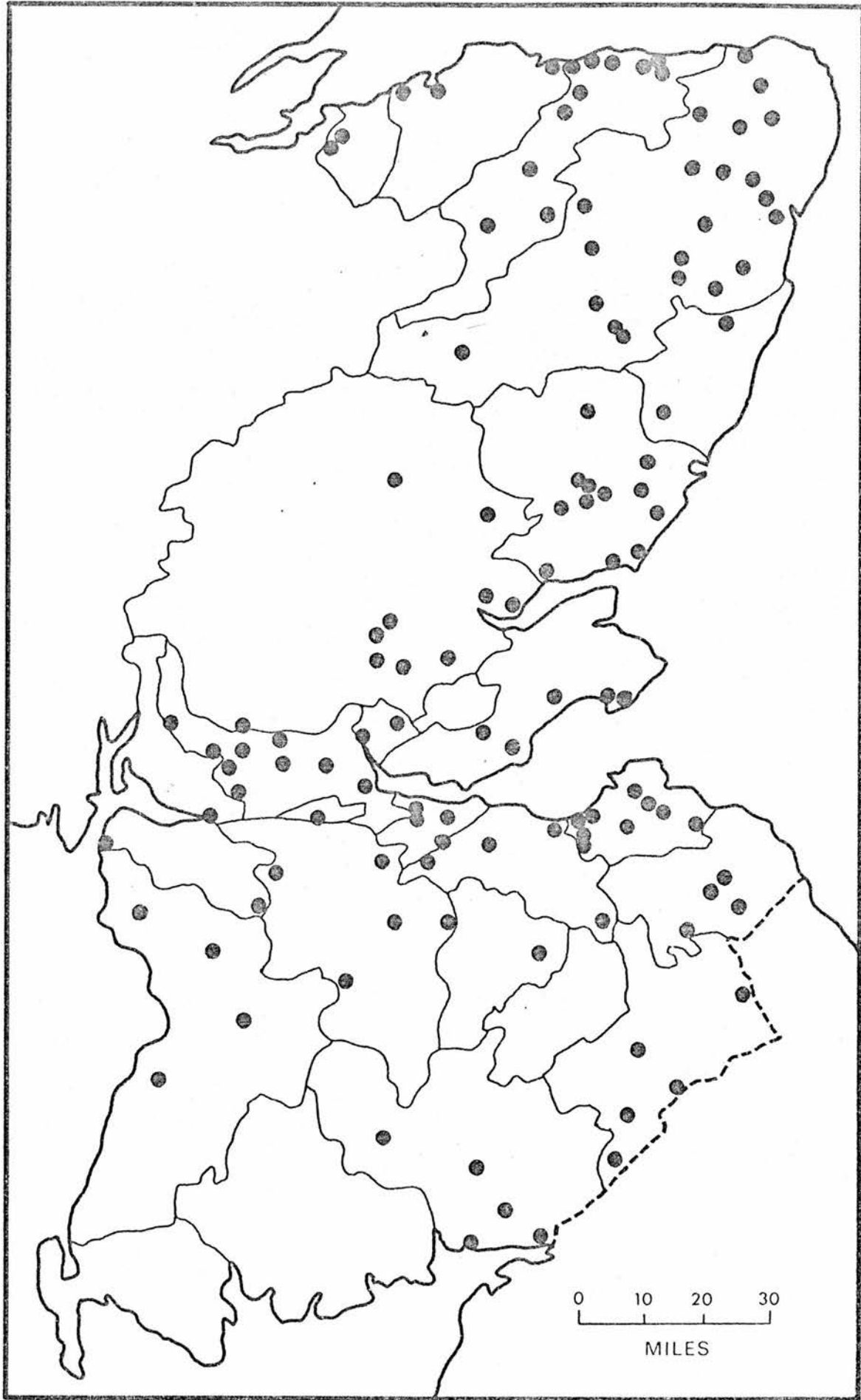
61. Ibid. VII 492 (1663)

62. Eg. Ibid. VII 557 (1669)

MAP 8.7 BURGHS OF BARONY ERECTED 1651-1707



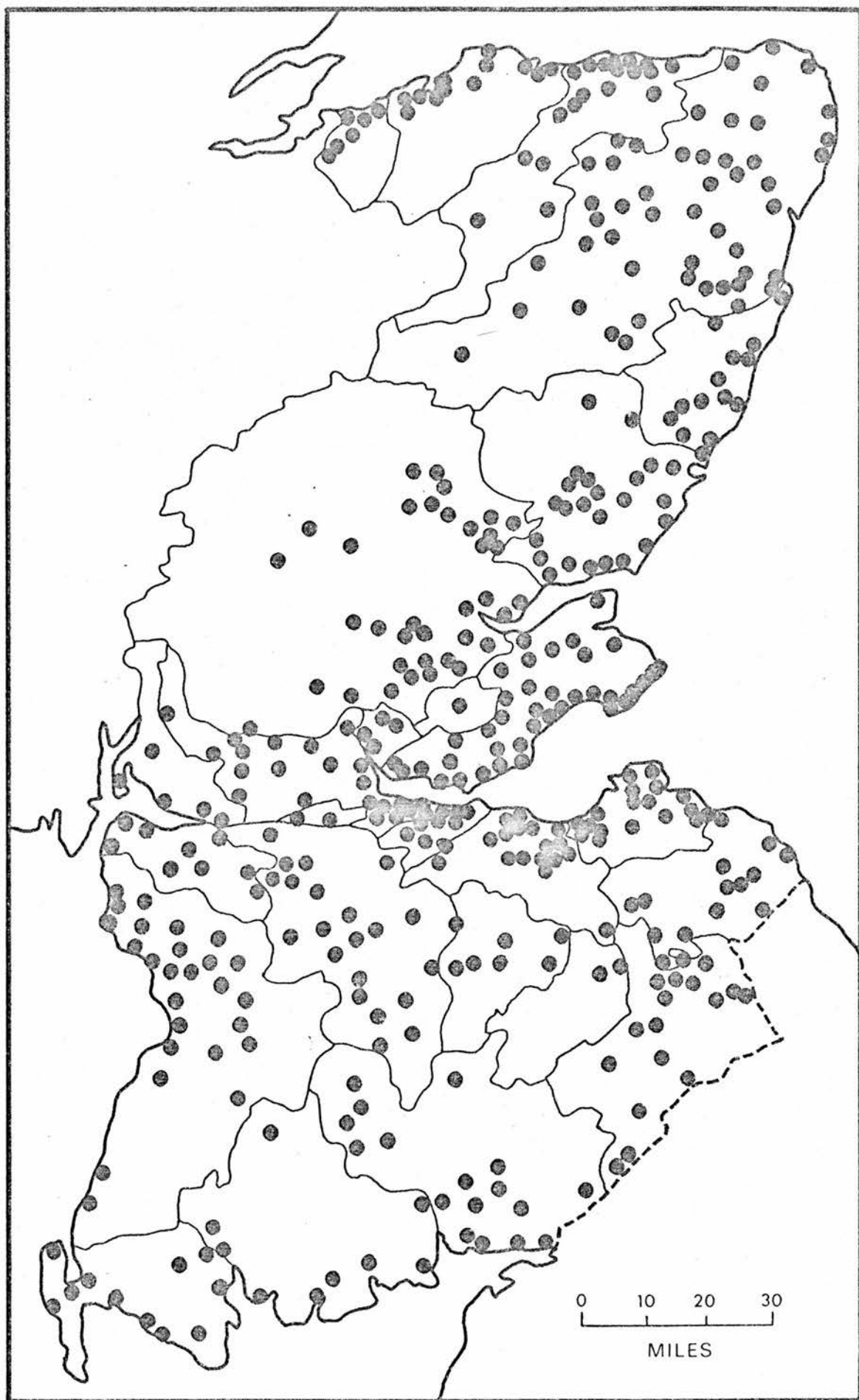
MAP 8·8 NON-BURGHAL MARKET CENTRES 1660-1707



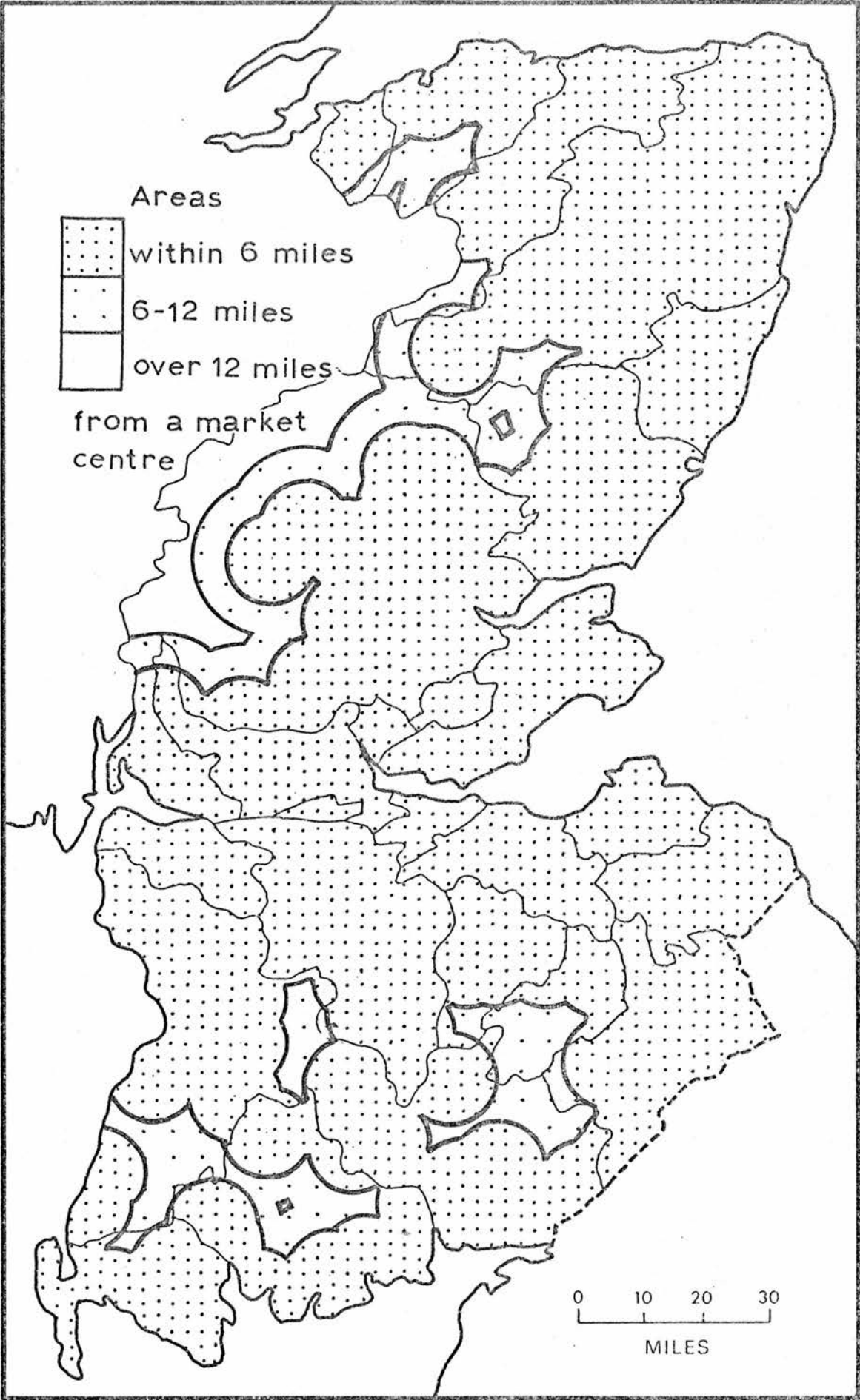
in response to a demand from the proprietors on whose lands the markets were established, and into whose pockets their revenues would go. The desire for a denser network of market centres came from the whole rural population. The effect of these centres was to "fill in" certain areas which had previously been poorly served, despite the increased number of burghs of barony during the early seventeenth century. Areas such as the interior of Banffshire, Buchan, Upper Deeside, the Don valley, and the Highland Edge from Loch Lomond to Kincardineshire, were now served by a fairly dense network of rural market centres.

The result of these trends is shown in Map 8.9. This illustrates the distribution of market centres of all kinds at the time of the Union in 1707. When compared with Map 8.4, the differences in density are striking. The change in the pattern of hinterlands which were served by these market centres is brought out by a comparison of Map 8.10 with Map 8.5. By 1707, few areas of Lowland Scotland were situated more than twelve miles from a market centre. Only a fringe in the remotest part of Perthshire, properly belonging to the Highlands, and some small patches in the North East, the Borders and Galloway were beyond this limit. The map also shows that a much greater area of the Lowlands was now within six miles of a market centre. The intervening spaces between the "core areas" had largely disappeared and the pattern of marketing resembled more a single integrated network than a series of semi-closed systems. This suggests that most of Lowland Scotland had developed a more commercialised economy by 1707. This is in accordance with the changes in marketing at other levels which have been discussed above. Taken together, they imply that the various improvements in agriculture

MAP 8.9 MARKET CENTRES IN 1707



MAP 8-10 ACCESS TO MARKET CENTRES 1707



which have been noted in previous chapters were accompanied by a distinct development in the pattern of marketing.

8.5 CAUSES AND EFFECTS OF THE NEW MARKET CENTRES

The mushroom growth of rural market centres in the later seventeenth century indicates that a considerable change had taken place in the marketing of agricultural produce. The increase in the number of centres suggests that a considerable growth of rural trading had taken place. Sir Robert Sibbald, writing in 1698, mentioned a number of trends in the contemporary Scottish economy which support this theory. He commented upon a substantial increase in both urban and rural population from the sixteenth century onwards which more than offset losses by emigration (63). He referred to an increase in arable production, due specifically to the adoption of liming and the expansion of the area under arable (64). Other evidence for this has been discussed in previous chapters. These increases were not accompanied by a corresponding growth of the export market, suggesting that more grain was changing hands at home. Sibbald also referred to an expansion of manufacturing and industrial activity (65). The picture which he presents is one of an expanding economy creating a greater demand for agricultural produce for food and for processing. Such an expansion could have both influenced and been affected by an improved marketing system. It is impossible to consider either of

63. Sir Robert Sibbald *Discourse Anent the Improvements May be Made in Scotland for Advancing the Wealth of the Kingdom* (1698)

NL. MS. 33.5.16 c.1

64. *Ibid.* c.3

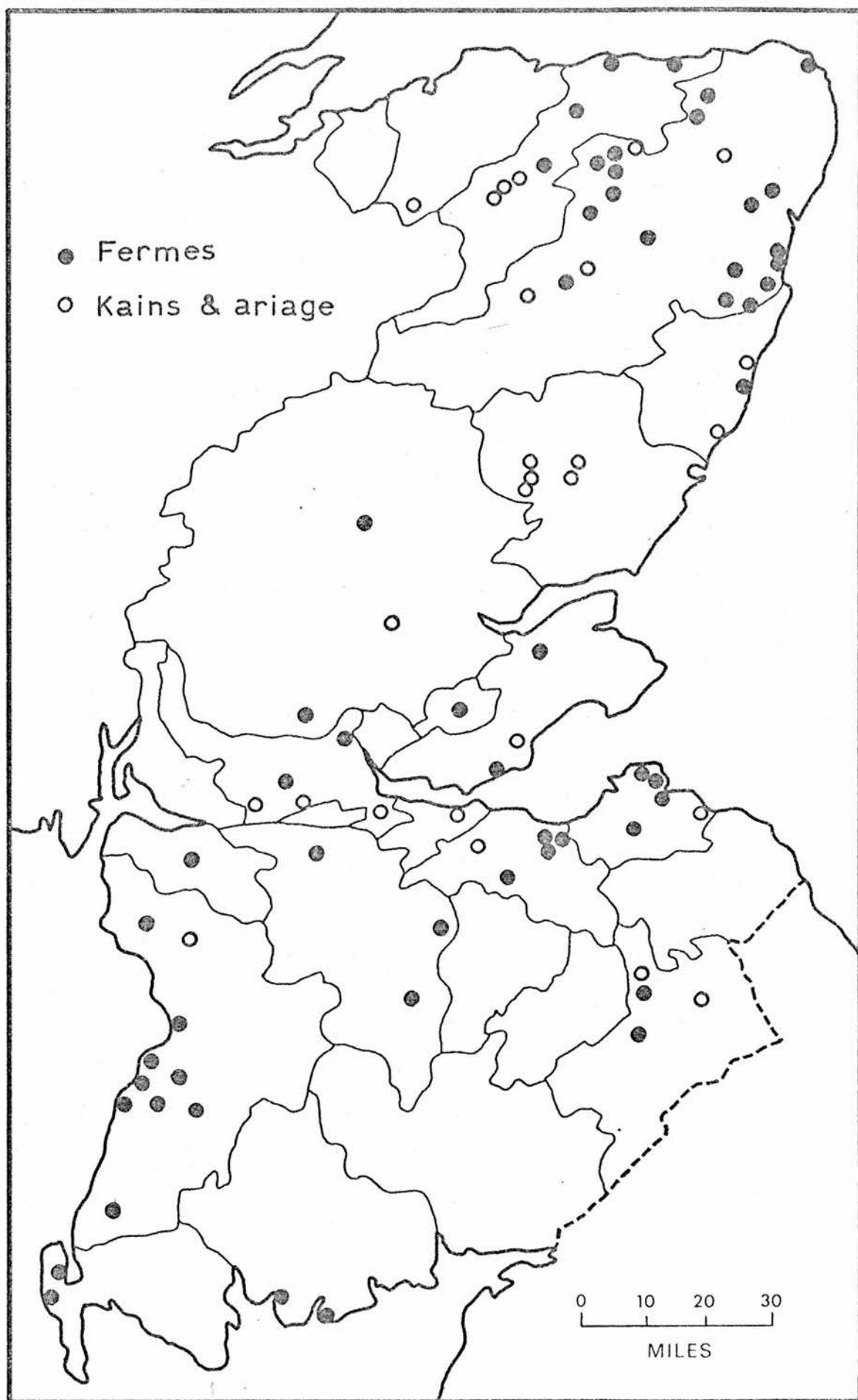
65. *Ibid.* c.4-5

these on a simple cause and effect basis, but they were clearly intimately related.

Another development which was closely associated with the expansion of marketing was the trend towards the commutation of rents in kind, including fermes, kains and labour services. The kain rents which were commuted were usually poultry, but also sheep, marts, pigs and dairy produce. The labour services were mainly carriages, peat-cutting, ploughing and harrowing. These commutations were less significant in their impact than the conversion to money of principal rents paid in grain. Map 8.11 shows the distribution of known examples of the commutation of various types of rent. Commutation of fermes occurred widely throughout Lowland areas where crop production was important.

The possible reasons behind the retention of grain rents in arable-orientated areas have already been discussed. The commutation of grain rents to money implies that a change in the pattern of marketing was beginning to take place in arable areas. Instead of proprietors selling grain on a large scale, individual tenants were now involved in marketing part or all of their own grain. This in turn implies that they had access to suitable market centres where they could dispose of their small individual surpluses. The late seventeenth-century date of most of the commutations suggest that these centres had only become available in the later seventeenth century. This indicates a close relationship between the commutation of grain rents and the increase in the number of market centres. Commutation can thus be seen as one of the most immediate effects of the increase in market centres and another symptom of the trend towards a more commercial outlook over a wider area of Lowland Scotland.

MAP 8.11 COMMUTATION OF RENTS IN KIND



It is difficult to assess how significant the trend towards the commutation of grain rents actually was. The majority of tenants on east-coast estates still paid their principal rents in grain at the end of the seventeenth century. Even on estates where commutation was widespread, part of the rents was sometimes retained in grain (66). Nevertheless, the examples shown in Map 8.11 suggest that the improvements in the infrastructure of marketing were beginning to encourage a change from the old pattern of rents in kind. The payment of rents partly in the form of miscellaneous produce and services had been a characteristic of medieval agriculture throughout Europe (67). It had persisted longer in Scotland than in many areas (68). Now, for the first time, such payments were beginning to become absorbed into a single payment in money. This was in itself a major break with the past.

8.6 CONCLUSION

The commutation of rents in kind and labour services may be seen as a product of a change towards a more widespread and effective marketing structure in Lowland Scotland. Formerly the marketing hierarchy had been more rudimentary with a good deal of the activity concentrated in the lowest level. This implied an economy which was still subsistence-orientated in many areas. The intermediate and upper levels of the hierarchy were still relatively undeveloped. The increases in production

66. S.R.O. Keith Marischal muniments GD 54 1/297 (1704)

67. Slicher van Bath B.H. *The Agrarian History of Western Europe A.D. 800-1850* (1963) pp.149-150

68. *Ibid.*

which have been considered in previous chapters reduced the need for trade at the lowest level. It also encouraged a substantial growth of marketing at intermediate and higher levels.

The changes in the pattern of marketing which have been described above thus appear to have been closely related to agrarian change, and they had a significant effect upon the agrarian economy of Lowland Scotland in the late seventeenth century. Some of the effects were immediate, such as the trend towards commutation. Some of the more important effects may have been long-term. For the first time, much of Lowland Scotland appears to have had an effective organisation for marketing agricultural produce. This may well have opened up vistas of commercial production to the proprietors of estates which had previously been operated on a subsistence basis. It is a truism that agricultural improvement is a futile exercise unless the products of the improved agriculture can be marketed. This implies both an efficient transport system and an ^{not} ~~necessary~~ effective marketing infra-structure. It has not been possible in this study to examine overland transportation in sufficient detail to determine whether or not it improved significantly during the seventeenth century. This suggestion has certainly been made by Michison (69). However, it is clear that the pattern of rural marketing had developed during the seventeenth century. One of the basic requirements of an improved agricultural system, namely an effective marketing organisation, was well on the way towards being created by the opening of the eighteenth century.

69. Michison R. Restoration and Revolution Chapter 9 of The Scottish Nation (1972) p.135

CHAPTER IX

THE GRAIN TRADE AND THE EDINBURGH MARKET

9.1 INTRODUCTION

In previous chapters agrarian change has been approached mainly from the standpoint of production, but the influence of demand upon production is a basic one and cannot be ignored. There will be no incentive to increase agricultural output unless the additional surplus can be marketed at a profit. This implies that agrarian change will be initiated by an increase in the demand for agricultural produce. Increased demand in turn implies a growth of the market for agricultural commodities, whether at home or abroad. Such a growth could be generated internally by an increase in population, by the development of manufacturing industries which processed agricultural produce, or by a rise in the standard of living. The growth of foreign markets might be related to similar processes operating in other countries, but the additional influence of changes in international politics on the pattern of trade, which might render some markets less accessible or open up others, must also be considered.

Changes in the pattern of demand can be studied directly by considering the evidence for changes in population, the development of manufacturing industries or rises in the standard of living. However, evidence relating to population and living standards is notoriously sparse for all pre-census periods and there is very little evidence relating to

industry in seventeenth-century Scotland. The evidence for increases in agricultural production has been reviewed in previous chapters. The two approaches can be linked by the study of the spatial interactions between supply and demand which constitute trade. Such interactions, relating to the transfer of goods and money, are often well recorded while details relating to production and consumption at either end are lacking.

Given that there is little direct evidence relating to changes in internal and external demand in Lowland Scotland in the seventeenth century, evidence must be sought through trade. It is unfortunate that customs records only give details of the import and export of goods from Scotland and do not record the internal movements of commodities. Such records cannot provide information relating to the home market or to the producers of the exported commodities.

Estate papers, with a few supplementary sources, provide a means of studying the internal movement of goods and although the information is fragmentary, it allows some kind of a picture to be obtained. Most of the evidence relates to the grain trade and this is the only branch of trade for which there is sufficient material on which to base even tentative conclusions. This is in some ways fortunate because, for a number of reasons, the state of the grain trade is one of the best indices of changes both in agricultural production and in internal and foreign markets.

Firstly, the growth of the grain trade is a good index of the development of a commercial economy. This applies no matter whether the grain was being exported abroad, or was merely being sold to grain merchants in the larger burghs to supply the home market. In the case of exported grain, it has been shown by Smout and Fenton (1), and can be amply

demonstrated from the port books of the east coast customs precincts (2), that grain was one of the most important commodities in Scotland's export trade in the late seventeenth century, at a time when the country was struggling to redress an unfavourable balance of payments problem (3).

When grain was sold to meet the demands of the urban population at home, the grain trade was still contributing to the overall development of the economy by allowing the maintenance and growth of a specialist non-agricultural population which was mainly engaged in industry and commerce. Grain, particularly oats and bere, was the staple foodstuff of Lowland Scotland at this time, and changes in the supply of grain to urban centres would have had a profound impact upon other branches of the economy. It was perhaps for this reason that contemporaries recognised the grain trade as being the foundation upon which all other economic activity rested (4).

Secondly, for a large number of east-coast estates, grain was the principal source of profit and, as a result, the whole agrarian economy of much of eastern Scotland and the areas of Western Scotland which produced grain for the Glasgow market, was geared towards the production of grain. This found expression in every aspect of rural society, affecting the ways in which tenants' services were utilised, the crops which were grown, and the type and quantity of fertilizers used. It may even have affected the structure of rural society itself, by encouraging the trend towards the large single-tenant farm, with its cluster of

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1. Smout T.C. and Fenton A. Scottish Agriculture Before the Improvers - An Exploration Ag.H.R. XIII (1965) pp.76-77
 2. Eg. S.R.O. Port Books E 72.7.15, E 72.16.15, E 72.1.12
 3. R.P.C. 3rd series vol.7 (1682) p.652
 4. Ibid. p.670

attendant cot-houses and servants' quarters. This was the most efficient way of working an arable holding while still retaining a large pool of labour for periods such as seed-time and harvest when there was an intense but short-term demand for it (see Chapter 7).

Because of the comparative ease with which bulk cargoes of grain could be transported, a large proportion of the trade involved the coastal shipment of grain. Much of the evidence for the grain trade in estate accounts relates to this because of the expenses involved in negotiating the contract for the sale of the grain to the merchant, or for the hire of the ship by a proprietor. However, it must be remembered that a considerable volume of the trade must have been carried by overland transport and that every burgh, whether coastal or otherwise, had its own landward market area. The size of these market areas was limited by the difficulties of overland transport, but although evidence for this aspect of the grain trade is not abundant and the short-haul carriages of grain, mainly by tenants delivering their rents, have gone largely unrecorded, it should not be considered as unimportant.

The expansion of commercial grain production during the seventeenth century has been noted by previous writers (5), but it has been studied mainly from mercantile sources, whose limitations with regard to internal movements and the home market have been noted above. The agricultural background to the development of the trade and the extent of the involvement of landed proprietors in it has received scant attention, perhaps because the source material is less accessible and less easily assimilated. It is hoped that, in this chapter, the grain trade can be more closely related to its agricultural basis.

9.2 THE MECHANISMS OF THE TRADE

The principal factor which appears to have determined whether or not an estate which was physically capable of concentrating on crop production would actually do so was its distance from the coast. There was little point in an estate specialising in the production of a grain surplus if it could not sell it with a sufficient margin of profit due to the cost and difficulty of getting the grain to a market or point of shipment. This automatically favoured estates which were situated on or near the coast against those which were situated inland, because of the ease and cheapness of coastal shipping compared to transport overland by cart or pack-horse.

The absence of rivers which were navigable by sufficiently large boats over any useful distance appears to have limited the area which could participate in the grain trade. It appears to have been restricted to the maximum distance from the coast over which it was an economic proposition to carry large quantities of grain by cart or pack-horse.

The distances over which tenants were required to deliver their grain rents, whether given in their tacks as a fixed radial distance from their holdings or as a specific destination, have been plotted in Table 9.1. It can be seen that out of 100 recorded movements, 89 were twelve miles or less. Each particular route has only been entered once, although some routes are specified many times in tacks for particular estates. If all these had been taken into account, the percentage of journeys of

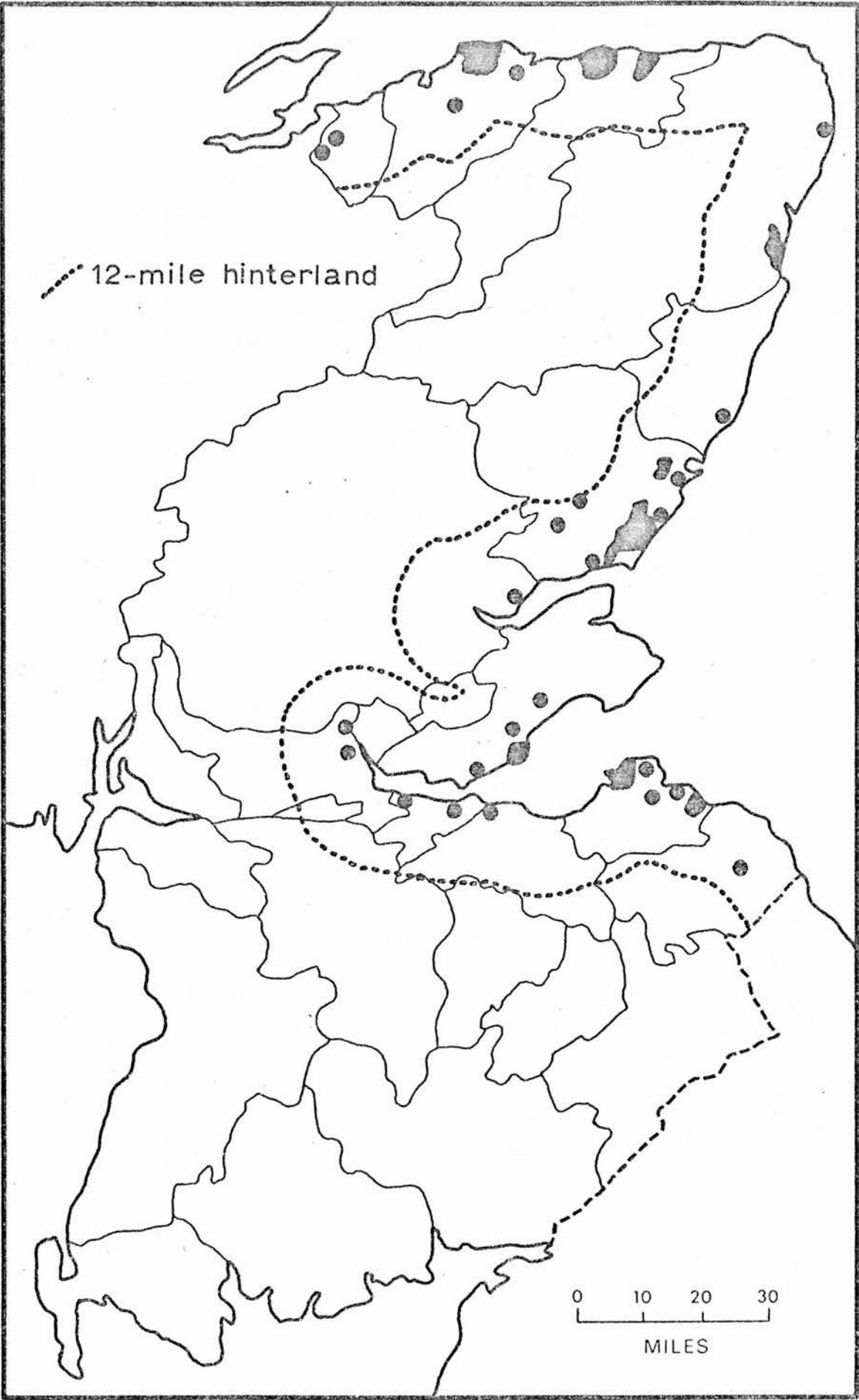
twelve miles or less would have been considerably higher. It would thus seem reasonable to define a limit of twelve miles inland from the coast beyond which the bulk carriage of grain overland was not generally an economic proposition except on a small scale to inland burghs which themselves served as market centres. As all the large burghs were on the coast, it would be reasonable to assume that this twelve mile limit would encompass most of the hinterland which concentrated on the production of grain for the urban market at home or for export. When the estates which are known to have participated in the east-coast grain trade are mapped (Map 9.1) they are all found to lie within this limit.

TABLE 9.1 THE CARRIAGE OF GRAIN TO MARKET CENTRES
BY TENANTS

<u>Miles</u>	<u>Number of carriages</u>
Under 4	14
5-8	44
9-12	32
13-16	<hr/> 2
17-20	1
Over 20	7

12-mile limit

MAP 9.1 ESTATES INVOLVED IN THE COASTAL GRAIN TRADE



There is a close correspondence between this limit and the distribution of estates on which rents were paid principally in grain (Map 8.1). There is likewise a great similarity with the distribution of known instances of the cultivation of wheat which, as been suggested in Chapter 3, was grown primarily as a commercial crop. This demonstrates that concentration upon grain production was not solely a function of physical geography, but was closely related to the accessibility of markets and the limitations of overland communication.

Estates which were beyond this twelve mile limit and yet were capable of concentrating upon arable farming might have been forced to adopt a more mixed and self-sufficient economy. This may have been the case with many estates in the lowlands of Central Aberdeenshire which lay inland of this limit. Some of these estates may have been potentially capable of concentrating upon crop production but their rent structures (Map 8.3) suggest that their economy was a mixed one. The only possible alternative for estates in such areas was the potential market of the interior upland areas which were deficient in grain. This alternative appears to have been taken up by the Gordon estates around Huntly. These estates are recorded as having shipped out cargoes of grain from Portsoy to Aberdeen and Leith (6), but they were situated beyond the twelve mile limit and may have found it hard to compete with coastal estates in the same area. This is suggested by the estate accounts which record the sale of considerable quantities of grain "to the men of Badenoch", ie. Upper Speyside (7). The occurrence of a group

6. S.R.O. Gordon muniments GD 44 167 (1704, 1706)

7. Ibid. 74 (1691-1693)

of estates in the central part of the Tweed basin whose rents were paid in grain yet which were some 30-40 miles from the coast (Map 8.1) suggests that they may have been exploiting a similar market in the Border dales (8). However, in most cases the areas which were best suited to grain production were probably within easy reach of the coast and able to market their surpluses.

Two other factors might have given a differential advantage to particular estates. These were the distance of coastal estates from the larger burghs which served as market centres in their own right, and acted as entrepôts for the export trade, and the availability of suitable harbours sufficiently close to an estate to allow it to ship out its surplus grain. Distance from the principal market centres can be almost entirely ruled out as an influence. This is demonstrated by the extent of the trade hinterland of Edinburgh which, as will be discussed below, included the whole of the east coast of Lowland Scotland from Berwickshire to the Moray Firth and extended beyond this to Caithness and Orkney. Very little information is available concerning freight rates for the coastal shipment of grain. At opposite ends of the scale there were, naturally enough, differences in freight costs. The cost of shipping a chalders of grain from the Earl of Morton's estate at Aberdour, barely six miles away across the Firth of Forth, was £2.4.0 in 1666 (9), while at about the same period the cost of shipping a similar quantity of grain to Leith from the Earl's estates in Orkney was £12 (10). Nevertheless, the fact that here from

8. Confirmation of this is suggested in Macfarlane's *Geographical Collections* S.H.S. (1908) III p.142

9. S.R.O. Morton muniments GD 150 2061

10. *Ibid.*

Orkney was being sent as far south as Leith at all, indicates that the pull of the Edinburgh market was sufficient to outweigh the increased cost of transport. These are extreme examples and most estates were neither situated so far from or so close to large market centres as were these. It seems likely from the expenses entered in estate accounts that a considerable part of the cost of shipping a cargo of grain was incurred in the loading, unloading and storage of the grain at each end (11), a cost which would be similar regardless of the length of the voyage. Coastal transport appears, in general, to have been so cheap that the cost of shipping a cargo of grain from the Moray Firth to Edinburgh was not significantly greater than that of shipping one from East Lothian or Berwickshire.

Poor harbour facilities do not appear to have proved an obstacle to the trade. As will be shown later, the vessels which were used for the coastal shipment of grain were of modest size and shallow draught and were able to use harbours which in some cases may have been little better than open beaches. The fact that estates like Dirleton and Panmure were able to export much of their grain through such unpromising harbours as Aberlady Bay (12) and East Haven of Panmure (13) suggests that there can hardly have been any part of the coast of Eastern Scotland which was sufficiently far from such a harbour to prevent neighbouring estates from participating in the grain trade. Even the rocky coast of Buchan was not short of suitable harbours. In 1679 Sir Patrick Ogilvy of Boyne petitioned the Privy Council for a voluntary collection to

11. S.R.O. Seafield muniments GD 248 579 (1637), 639 (1685)

12. S.R.O. Biel muniments GD 6 1504 (1669)

13. S.R.O. Dalhousie muniments GD 45 18 66 (1672)

be raised towards the construction of a new harbour at Portsoy (14), maintaining that there was no harbour for large vessels along eighty miles of coast in that area. However, Portsoy was one of the harbours through which various estates, the Boyne estate included, had been shipping grain from the early years of the century (15), suggesting that the vessels engaged in the grain trade could use almost any location as a harbour.

In order to get the grain to the coast and concentrate it at one point in sufficient quantity to make a worthwhile cargo, proprietors were able to utilise the carriage services of their tenants. Tenants whose rents were wholly or substantially in grain were usually required, as part of their carriage services, to transport their fermes, and in some cases the produce of the mains as well (16), to wherever the proprietor required. They did this in their own sacks, on their animals, and at their own expense, normally within a radius of twelve miles or less, as has been discussed above. This was a common clause in tacks on east-coast estates (17), the clauses either specifying that the tenant should deliver the grain to a specific location (18) or within a certain radius of the estate (19). The grain which was harvested in the previous autumn was

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14. R.P.C. 3rd series vol.6 (1679) p.134
 15. S.R.O. Seafield muniments GD 248 572 (1625).
 16. S.R.O. Haddo muniments GD 33 28/29 8 (1676)
 17. Eg. S.R.O. Biel muniments GD 6 1503 (1666)
 S.R.O. Leven muniments GD 26 5 79 (1694)
 S.R.O. Clerk of Penicuik muniments GD 18 831 (1685)
 18. Eg. S.R.O. Dalhousie muniments GD 45 20 63 (1700)
 S.R.O. Shairp muniments GD 30 629 (1595)
 S.R.O. Lintrose muniments GD 68 265 (1696)
 19. S.R.O. Yester muniments GD 28 2001 (1668)
 S.R.O. Makgill muniments GD 82 350 (1660)
 NL. MS. 144 15 (1630)

threshed out in the early part of the winter and was normally required to be delivered between Christmas and Candlemas (February 2nd) (20). This was probably the worst season of the year for the overland transport of bulk commodities, especially by cart, as has been discussed in Chapter 8. Transport by pack-horse was standard.

The destination to which the tenants carried their *ferme* depended upon the situation of the individual estate. The grain on inland estates was commonly delivered to girnels at the estate mansion. For instance, the grain from the lands of Innerqueich on the Airlie estates two miles east of Alyth in Perthshire, was carried to the estate's girnels at the castles of Forter and Cortachy (21). If the estate was on the coast and had its own harbour, then the proprietor might build girnels there. This was the case on the Panmure estates, where the Earl of Panmure maintained girnels at his own burgh of barony, East Haven of Panmure (22), through which most of his grain was shipped. Otherwise, the proprietor would have to rent girnels at whichever harbour he used and have the tenants deliver the grain there. This was the practice on the Dirleton estates, where the tenants of the baronies of Innerwick and Dirleton delivered their *fermes* to girnels rented by Sir John Nisbet of Dirleton at Dunbar and North Berwick respectively (23).

If an estate was fortunate enough to be situated close to a large burgh, the estate might negotiate contracts of sale with merchants there or hire girnels in the town and have the tenants deliver their grain direct

20. S.R.O. Airlie muniments GD 16 28 248

21. *Ibid.* 52 (1635)

22. S.R.O. Dalhousie muniments GD 45 18 66 (1672)

23. S.R.O. Biel muniments GD 6 1519 (1680)

to the burgh. The landward market areas around the major east-coast burghs are partly brought out by Map 9.1. The effect of the presence of a large market upon the rent structures of surrounding estates has been discussed in the previous chapter.

9.3 THE STRUCTURE OF THE GRAIN TRADE

In a large number, probably a majority, of cases, estates did not ship their grain to distant markets themselves. The proprietors of east-coast estates appear to have been insufficiently wealthy or the trade itself was not sufficiently well-established and dependable for the average proprietor to derive any economies from buying, manning and maintaining his own vessels for the coastal grain trade, or from acquiring a share in a vessel for exporting the grain abroad. The hiring of vessels for shipping grain to home markets was sometimes done, as will be discussed below, but it was probably not a very common practice.

The Earl of Panmure maintained two fishing boats at the harbour of East Haven on his own estate which were sometimes used for bringing in raw materials from Dundee (24). These vessels may have been used on occasion for shipping grain out to Dundee to save the efforts of the tenants in carrying the grain overland or to reduce the time taken, but if this was the case, and the evidence is not conclusive, it was only a small-scale and part-time operation. Apart from this doubtful example, east-coast proprietors do not appear to have entered the trade directly with their own vessels.

24. S.R.O. Dalhousie muniments GD 45 18 35 (1653)

The standard procedure for the sale of a consignment of grain was for the proprietor, or his factor, to negotiate a contract of sale with one or more of the merchants in one of the larger east-coast burghs. If the burgh was close to the estate and the proprietor an absentee, then the factor might undertake the task of driving a bargain with the merchants. At Belhelvie this was the excuse for a good deal of hard drinking in Aberdeen taverns (25). If the burgh was a distant one the proprietor, if he was sufficiently wealthy and the trade a lucrative one, might maintain an agent there to look after his interests, as the Earl of Seafield did at Edinburgh towards the end of the century (26). The contracts for the sale of consignments of grain to merchants have survived in fair number for the Dirleton estates and occasional ones occur among other estate collections. The format of these contracts is a fairly standard one. The estate undertook to provide a specific quantity of grain if it was already in store in the girnells following the harvest, or in a quantity within maximum and minimum limits if the sale was arranged sufficiently far in advance of the harvest for the proprietor to be uncertain just how fully his tenants would be able to pay their rents (27). The merchant in turn undertook to furnish a vessel, either his own or under charter, adequately manned and equipped and in a seaworthy condition (28). The merchant might bind himself to send a ship to the harbour which the estate was using by a certain date and the estate might in turn undertake to have the grain ready

25. S.R.O. Dalhousie muniments GD 45 20 5 (1662)

26. The Seafield Correspondence 1685-1708 ed. Stewart J. S.H.S. (1912) p.83

27. S.R.O. Dalrymple muniments GD 110 689 (1689)
S.R.O. Dalhousie muniments GD 45 20 192 (1667)

28. S.R.O. Biel muniments GD 6 1542 (1692)

for loading by then (29). As shipping was frequently carried out in the spring and early summer, provision was sometimes made to exclude the seed time for either bear or oats from the estate's delivery dates, for at such times the tenants would be fully occupied and would not be able to spare the time to transport any outstanding fermes to the harbour, and the proprietors' servants would be too busy on the mains to be available for helping to load the ship (30). Once the ship was loaded, the sea-risk (whether or not the proprietor was entitled to compensation in the event of the loss of the grain in transit through shipwreck, piracy or spoiling by salt water) was a matter for negotiation between the proprietor and the merchant. On the Dirleton estates, Sir John Nisbet normally undertook to carry the sea-risk unless it could be proved that the damage had been sustained through negligence on the part of the merchant or the skipper of the chartered vessel (31), but the Dalrymple family were having their grain shipped from their North Berwick estates at around the same time with no sea-risk attached to the estate at all (32).

The vessels which were used for this trade appear to have been of fairly moderate size. One reference for the Belhelvie estates suggests that the standard vessel used in the trade had a crew of only six besides the skipper (33), and another that the vessel had a capacity not exceeding 500 bolls of grain (about 25 tons) (34). Another reference in the Cawdor estate papers suggests that vessels trading between the Moray Firth

29. S.R.O. Dalhousie muniments GD 45 20 195 (1668)

30. Ibid. 20 10 (1667)

31. S.R.O. Biel muniments GD 6 1544 (1691)

32. S.R.O. Dalrymple muniments GD 110 689 (1680)

33. S.R.O. Dalhousie muniments GD 45 20 24 (1680)

34. Ibid. 16 (1673)

and Leith were commonly of about 300 bolls capacity (about 15 tons) (35). The survey of the condition of Royal Burghs carried out by the Commission of Royal Burghs in 1692 contains entries which list the tonnage of ships owned by some of the burghs. A distinction is made between barks and ships, the former only running up to about 40 tons burden and the latter sometimes exceeding 200 tons (36). The return for Montrose makes it clear that it was the former class of vessel which was used for the coastal shipment of grain, for it records that "our barks are employed for transporting gentleman's victwall to the Firth (of Forth)" (37).

Small as these barks were, they do not appear to have been fishing boats in occasional use for the transport of grain. Some of the contracts in the Rose of Kilravock muniments make it clear that the trade between estates in the North East and the Firth of Forth was a regular two-way one, where the barks sailed northward with cargoes for the northern burghs rather than in ballast, and then took on consignments of grain after discharging their cargoes (38). Some barks took on loads of lime as ballast because it could be sold at a profit in the North-East, unlike stones which would merely have been dumped over the side (39).

Some proprietors involved themselves more directly in the grain trade by cutting out the merchant and marketing the grain themselves. This entailed the proprietor hiring his own vessels for shipping the grain, and renting girnells at the port to which the grain was brought. The

35. The Book of the Thanes of Cawdor Spalding Club (1859) p.328 (1673)

36. Register Containeing the State and Condition of Every Burgh Within the Kingdome of Scotland in the Year 1692 Misc.Scot.Burgh Hist. Soc. (1881) p.56

37. Ibid. p.88

38. S.R.O. Rose of Kilravock muniments GD 125 21 (1703)

39. The Thanes of Cawdor op.cit. p.328 (1673)

proprietor would either need to maintain an agent at the destination to sell the grain for him, as was the case with the Earl of Seafield (40), or send one of his estate officers with the grain on board ship, to take charge of unloading, storing and selling it (41).

The risks inherent in this system were probably greater than those involved in selling the grain to a merchant, but the profits may have been considerably greater at times. When the grain was sold to a merchant, the contract was arranged in advance, sometimes before the grain was actually harvested. This probably meant that the price that the merchant would guarantee for the grain would be fairly low. He had to make a profit on the re-sale of the grain, and to do this he would have to make a generous allowance for the possible fluctuations of the grain market based on the success or otherwise of the coming harvest. Nevertheless, this was a sure way of selling the grain, for once the contract was drawn up, the price was guaranteed unless the merchant went bankrupt. However, the unfavourable prices which estates may have obtained for their grain from time to time, may have encouraged proprietors who were prepared to take a calculated risk to charter their own vessels and sell the grain direct. In this way there was a chance of unloading it on the market when prices were most favourable.

The potential risks involved in this method may have been the cause of its being adopted by relatively few proprietors. The correspondence between Alexander Fella, Sir James Ogilvy of Boyne's agent in Leith, and his employer, illustrates the concern of both parties over the prices which

40. Seafield Correspondence op.cit. p.83 (1682)

41. S.R.O. Keith Marischal muniments GD 54 1/268 (1608)

rival proprietors were receiving and how the market was trending. In 1693, Fella wrote to Ogilvie ..

"The Orknay and Cathnes beir is sold for 4 merks the boll,
and is daily falling and especiallie the meall ... noe thing
hinders me now but onlie waiting for that veshell and the
longer she is comeing up I fear the mercat ... will be the
worse" (42),

and a few days later ...

"I am very anctiouss to be relieved, but sees no appearance
of that veshall as yett, and the pryces falls every day ...
If the bear wer heer I expect £5 to a day (ie. on credit) ore
seven merks raidy money (cash). Merchands are very
affrayed to medle at this tyme." (43)

The result of shipping the grain to a market which was already glutted might be the storage of the grain for a considerable time and its eventual sale at a low price. This appears to have been the case with a consignment of meal shipped from Buchan to Leith "quhilk aittis lay lang in Andrew Mitchell's loft in Leith befor thai wer sellit .." (44). Alternatively, the proprietor's agent might hurriedly search for a market where higher prices were being obtained. This was the case with a cargo of grain shipped from the Rose of Kilravock estates in Nairnshire, when the accounts of the expenses involved in the sale of the grain included a payment for "ane express to Falkirk to try to get the cargoe sold there, being very hard to sell at Leith" (45).

42. Seafield Correspondence op.cit. p.83 (1692)

43. Ibid. p.86 (1692)

44. S.R.O. Keith Marischal muniments GD 54 1/268 (1608)

A third system which proprietors sometimes used was to hire a ship or purchase a share in one for the direct export abroad of their grain. This does not appear to have been very common, for the only proprietors who are known to have done this are the Earl of Strathmore and the Earl of Errol. The former is recorded as having owned an eighth share in a vessel which shipped grain, including his own, to Norway (46). At a later date he chartered a vessel to take all the grain remaining in his girnels, some 600 bolls, to Dunkirk (47). The Earl of Errol was involved in shipping a cargo of several hundred bolls of meal to Norway in 1685 (48). The reasons why more proprietors did not engage in the direct export of their grain were probably numerous but some possibilities may be suggested. The cost of hiring a sea-going vessel for such a long voyage, or of buying a share in one, would have been much greater than that of chartering a bark for the coastal trade. The risk attached to such a voyage would also have been greater, with the danger of privateers in wartime. It is significant that most ventures of this nature were conducted by merchants who operated on a basis of shares, each merchant preferring to spread the risk of loss by having shares in several ships (49). The vacillating policy of the Privy Council towards the export of grain must also have proved an obstacle to men who were proprietors of estates first and grain merchants second.

45. S.R.O. Rose of Kilravock muniments GD 125 21 (1704)

46. The Glamis Book of Record 1684-1689 S.H.S. (1890) p.60

47. Ibid. p.63

48. R.P.C. 3rd series vol.11 (1685) p.69

49. Smout T.C. A History of the Scottish People 1560-1830 (1969) p.157

9.4 THE GROWTH OF THE EDINBURGH MARKET

In a classic paper, Fisher has argued that one of the three outstanding processes which mark the transition from a medieval to a modern economic system is an increase in the size of markets (50). Fisher traced the expansion of the London food market from the mid-sixteenth century to the mid-seventeenth century. The market area started as a relatively localised district of supply in south-east England at the beginning of the period, but a century later it had grown to include most of England (51).

To reverse Fisher's argument, one might expect that where there was evidence to show that agriculture was becoming more commercialised, then one important influence behind the change might have been the increased demand generated by an expanding market at home or abroad. The possible reasons for the expansion of the home market have been discussed above. In the context of seventeenth-century Lowland Scotland this would refer in particular to Edinburgh and her satellites of Leith and the Canongate which, it has been estimated, were three times as large as their closest rival at this period (52).

Fisher's argument was based principally upon evidence relating to the grain trade, because information for this branch of trade was more abundant. A similar situation occurs in Lowland Scotland, and if evidence for the growth of the Edinburgh market is to be found, it is most likely to

50. Fisher F.J. The Development of the London Food Market 1540-1640
Ec.H.R. V (1935) p.46

51. Ibid. p.50

52. Smout T.C. Scottish Trade on the Eve of the Union 1660-1707
(1963) p.132

be through an analysis of the grain trade. Even here, the evidence is fragmentary and most of the details of the involvement of particular estates relate to isolated years or groups of years. However, data for long runs of years are available for four east-coast estates and less complete runs occur for some others so that the information is not entirely random.

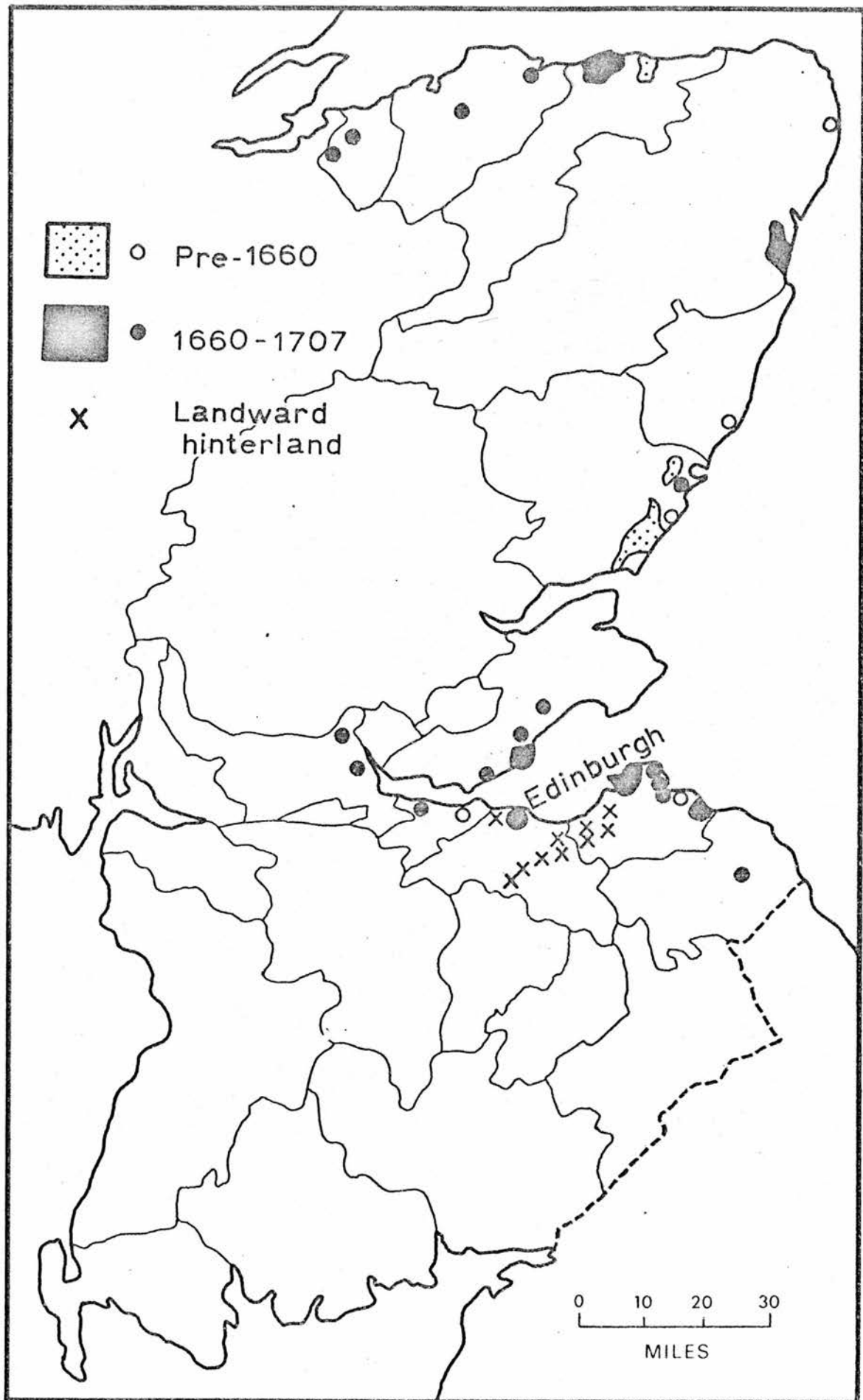
An attempt to delimit the hinterland which supplied grain to Edinburgh has been made in Map 9.2 which shows the estates which are recorded as having, at some time or other between 1600 and 1707, sold cargoes of grain to merchants in Edinburgh, Leith and the Canongate. Due to the gaps in the data it has only been possible to adopt a very crude division of time into two periods, pre-1660 and 1660-1707. The reasons for the choice of this particular break are largely dictated by political events. The internal trade in grain as well as the export trade was frequently interrupted between about 1645 and 1660 by the progress of the Civil Wars and the Cromwellian occupation, with the diversion of supplies of grain to maintain armies in the field and permanent garrisons (53), not to mention the damage caused by plundering on the part of both factions (54). As will be discussed below, there is evidence that the Civil Wars turned back the clock by curtailing the expansion of the Edinburgh grain market and delaying its development by some two or three decades. If the period 1645-1660 is treated with caution and partly isolated, two contrasting periods of almost equal length emerge, 1600-1707, during which Lowland Scotland was comparatively stable politically

53. S.R.O. Dalhousie muniments GD 45 18 35 (1653)

A.P.S. VI pt.1 p.469 c.75 (1645)

54. S.R.O. Mar and Kellie muniments GD 124 17 17 (1660)

MAP 9.2 THE EDINBURGH GRAIN MARKET



and the grain trade was free to operate in accordance with the normal fluctuations of supply and demand. Any evidence for the growth of the Edinburgh grain market should be reflected by contrasts between these two periods.

One of the most significant features of the map is that the hinterland which supplied grain to the Edinburgh market extended as far as the Moray Firth in the earlier part of the century. The estate of Boyne, near Banff, was engaged in the sale of grain to Edinburgh merchants as early as 1625 (55), and there are records in the Keith-Marischal muniments which indicate that an unknown estate in Buchan was hiring vessels to ship grain from Peterhead to Edinburgh in 1608 (56). From the areal distribution alone, it is not possible to decide just how important and regular trade with the Moray Firth was, for even the more local market area around the Firth of Forth does not show up clearly for the earlier period, though one must certainly have existed. However, the increase in the number of estates in the North-East which are recorded as having traded with Edinburgh from six before 1660, to fourteen between 1660 and 1707 is perhaps an indication that an expansion, or more properly an intensification of the use of the market area in the North-East, occurred.

Other evidence indicates that the Edinburgh market area for grain in the later seventeenth century extended beyond the bounds of Lowland Scotland. To the north, it included Caithness and Orkney (57). Southward, trade with England was irregular due to the policy of the Scottish

55. S.R.O. Seafeld muniments GD 248 639 (1637), 578 (1627), 572 (1625)

56. S.R.O. Keith Marischal muniments GD 54 1/268 (1608)

57. Seafeld Correspondence op.cit. p.83 (1692)

Privy Council of banning the import of foreign grain except in years of shortage at home. Nevertheless, when in 1691 the ban upon the import of grain was re-imposed after having been lifted during the exigencies of the military campaigns of 1688-90, several merchants were caught napping with cargoes of English grain at sea. Several Edinburgh merchants were granted special licences to import consignments of grain that had been loaded at Newcastle and, in one instance, Scarborough (58). This suggests that, when legislation permitted, North-Eastern England found a worthwhile market for its surplus grain in Edinburgh and the Firth of Forth.

In order to demonstrate more clearly a definite expansion of the market area for grain in the North-Eastern Lowlands, a different technique must be used. In Table 9.2 the occurrence of every recorded shipment of grain from estates north of the Tay to Edinburgh had been plotted alongside that of shipments of grain from the same estates whose destinations were burghs within the area, principally Aberdeen, Arbroath, Dundee and Montrose. It has not been possible to assemble any data relating to consignments of grain transported overland. The first two decades of the century can probably be ignored, as there is very little data for this period. From 1619 onwards, a complete set of estate accounts is available for the Panmure estates, and the years in which all or almost all of that estate's grain was sold back to the tenants and was not sold off the estate have been indicated. They show that trade on at least one estate was almost non-existent. Considered in broad terms, the pattern suggests that while there was a regular movement of cargoes of grain within the

58. R.P.C. 3rd series vol.VXI (1691) pp.45, 46, 74, 131, 317

TABLE 9.2 RECORDED SHIPMENTS OF GRAIN FROM THE NORTH EAST

Year	Cargoes to Edinburgh	Cargoes within North East		Cargoes to Edinburgh	Cargoes within North East	
1600			1627	1	1	X
1601			1628			X
1602		1	1629			X
1603			1630			X
1604			1631			X
1605			1632		3	X
1606			1633		1	X
1607			1634		1	X
1608	1		1635		2	X
1609			1636		2	X
1610			1637	3	3	X
1611			1638	1	4	X
1612			1639	2	4	X
1613			1640	1	3	
1614			1641	1	2	
1615			1642	2	2	
1616			1643	2	2	
1617	2		1644	1	4	
1618		1	1645		6	
1619			1646		5	
1620			1647	2	6	
1621			1648	2	1	
1622		3	1649		3	
1623			1650	1	4	
1624			1651	1	5	
1625			1652		4	
1626		1	1653		4	

X - Years in which no grain was sold off the Panmure estates

TABLE 9.2 (sheet 2)

Year	Cargoes to Edinburgh	Cargoes within North East	Year	Cargoes to Edinburgh	Cargoes within North East
1654		6	1681	5	5
1655		8	1682	8	6
1656		8	1683	6	6
1657	1	9	1684	2	11
1658	2	10	1685	9	5
1659		7	1686	11	2
1660		6	1687	9	6
1661		3	1688	7	
1662	3	7	1689	4	4
1663	1	6	1690	8	
1664	2	7	1691	5	4
1665		3	1692	2	9
1666		7	1693	5	7
1667	1	5	1694	4	3
1668	1	4	1695	2	3
1669	1	4	1696	1	4
1670	1	5	1697	1	5
1671	3	3	1698	1	4
1672	3	4	1699	3	5
1673	7	7	1700	1	4
1674	7	1	1701	2	7
1675	3	6	1702	1	4
1676	2	4	1703	3	4
1677	2	8	1704	5	3
1678	2	6	1705	4	3
1679	5	5	1706	4	3
1680	6	7	1707	2	2

TABLE 9.2 SUMMARY

<u>Decade</u>	<u>Cargoes to Edinburgh</u>	<u>Cargoes within North East</u>
1600-09	1	1
1610-19	2	1
1620-29	2	5
1630-39	6	20
1640-49	13	38
1650-59	5	66
1660-69	9	52
1670-79	35	49
1680-89	67	52
1690-99	32	44
1700-07	22	30

North-East itself from the early 1630s until the end of the century, the grain trade with Edinburgh was irregular and occasional before the late 1660s. There is, however, an indication that an embryo trade with Edinburgh was beginning during the late 1630s and early 1640s, only to be curtailed by the onset of the Civil Wars. The pattern suggests that the demand of the Edinburgh market between the opening of the century and the 1660s was fairly limited, and may have been related to years following relatively poor harvests when the local hinterland around the Firth of Forth was unable to fully meet the needs of the city.

From the late 1660s, however, the pattern changes with the development of a regular trade with Edinburgh which continued almost without interruption until the end of the century, save for some fall-off in the late 1690s due to the series of harvest failures. This apparent late seventeenth-century expansion of the grain trade with Edinburgh occurred side by side with the continuation of trade within the North-East. It is obviously impossible to attempt to assess the increased flow of grain into Edinburgh, given the nature of the data, but the fact that the trend is such a clear one, suggests that the expansion must have been considerable.

When the pattern of the disposal of grain surpluses on individual estates for which semi-complete runs of accounts are available is considered, the trend discussed above is reinforced. All four of the estates in the North-East for which such information is available show in increasing involvement with Edinburgh merchants in the late 1660s and early 1670s. On the Panmure estates, cargoes of grain began to be sent to Edinburgh again on a regular basis after the short-lived development of the trade before the Civil Wars from about 1674, after which it continued

to the end of the century. Similar contacts were developed with Edinburgh at around the same time by the Belhelvie and Kellie estates (about 1670), and the Brechin estates (about 1673).

An important supplementary source which supports the idea of a marked expansion of the Edinburgh market for grain at this period are the records of the Dirleton and Thornton estates among the Biel muniments. Here there was a striking change in the pattern of the disposal of grain on these East Lothian estates at about 1678. Prior to this, most of the grain had been sold in fairly small consignments to local centres such as Haddington, Tranent and Prestonpans, but after this date, the grain seems to have been sold almost entirely to Edinburgh merchants in much larger consignments. This suggests that at the same period there may have been a marked growth in the sale of grain to Edinburgh from areas which were far closer to the city than the North East. This may be another indication of the intensification of the trade.

Despite the limitations of the source material, there appears to be sufficient evidence to point towards a substantial increase in the hinterland which supplied grain to Edinburgh during the seventeenth century. The increase was probably more gradual than the evidence discussed above might seem to indicate, for it is more likely that there was a gradual expansion of the market throughout the seventeenth century, although the possibility of more rapid growth in the two decades following the Restoration cannot be disregarded. However, the information which is available indicates that the growth of the market area, particularly in the North-East although also possibly within the Firth of Forth, during the later part of the seventeenth century was rather an intensification of

the use of existing areas which had previously been exploited on a more irregular basis. There is also evidence for a brief expansion of the grain hinterland of Edinburgh in the late 1630s and early 1640s which was checked by the disturbances of the Civil Wars.

If such an expansion occurred then there ought to be supporting evidence relating to population growth, industrial expansion, and a rise in the standard of living at home, or an increased entrepot trade through Leith if much of the grain which was being brought from the North-East was destined for export. With regard to Lowland Scotland in general, very little can be said with certainty concerning population trends in the seventeenth century. Smout has suggested that the population of Edinburgh and the other large east-coast burghs may have trebled in the century between 1560 and 1660 with some check due to the epidemics of the 1640s (59). References by contemporaries are few and vague, but the best source is Sir Robert Sibbald who wrote in 1698 that "when we compare the circumstance of the last age (the sixteenth century) with thes of this that is current, the number of people must be very much increased" and, with regard to the urban population, "not only all the towns that were built in that last age are very much increased in buildings by what they were then, but several are built where there were non in the last age ... Ther was a gentleman died since the 1660 who remembered that ther was bot one house wher now ther is the town of Borrostoness ..." (60). Sibbald was writing in general terms but his reference to Bo'ness suggests that the expansion may have been most marked in the Firth of Forth, and

59. Smout T.C. (1963) *op.cit.* p.147

60. Sir Robert Sibbald *Discourse Anent the Improvements May Be Made in Scotland for Advancing the Wealth of the Kingdom* (1698) c.1 c.2

if this was the case then it must surely have been accompanied by some increase in the population of Edinburgh which was the key centre around which most of the economic activity of the Firth of Forth revolved.

Evidence for an increase in manufacturing activity in the capital is likewise fragmentary. People who were involved in trade and in making policy decisions affecting the Scottish economy, were well aware that the basic cause of Scotland's balance of payments problem was her reliance upon the export of unprocessed raw materials or semi-finished commodities, and the necessity of importing a large proportion of the manufactured goods and luxury items which were in demand (61). In addition, merchants were experiencing difficulty in selling abroad some finished products, such as linen, because their quality did not compare with that of their competitors' goods (62). Attempts to redress this were made, particularly in the last thirty years of the century. Bans were imposed upon a wide range of imported luxury goods, including many types of clothing (63), in an attempt to stimulate home manufactures, and more positive efforts were made to encourage new manufacturers to set up operation (64). The effect of this seems to have been a substantial expansion of industry in and around Edinburgh during the period 1660-1707 (65). Smout mentions a number of new industries which developed during this period and which must have contributed to a growth of population in the city. In addition, the old-established brewing industry underwent an expansion (66) which must have directly increased the city's

61. R.P.C. 3rd series VII (1682) p.652

62. Ibid. p.656

63. Ibid. p.658

64. Ibid. (1681) p.101

65. Smout T.C. (1963) op.cit. p.132

66. Ibid.

demand for bere. By 1682 the brewers of Edinburgh were described as being the greatest consumers of bere in the country (67), and many of the consignments of bere which were sent to Edinburgh were destined specifically for "maltmen" or brewers rather than merchants (68).

There is likewise little definite information concerning the position of Edinburgh and her satellite ports as entrepôts. The annual export figures for grain from the various customs precincts have yet to be worked out and the best that can be suggested is that the Leith customs precinct was a substantial exporter of grain. Table 9.3 shows the figures for the export of grain from the east-coast customs precincts of Lowland Scotland for the customs year 1st November 1684 - 31st October 1685

TABLE 9.3 EXPORT OF GRAIN FROM SCOTLAND
1st November 1684 - 31st October 1685

<u>Customs precinct</u>	<u>Bolls of grain exported</u>
Leith	35,151
Montrose	29,536
Dundee	27,543
Fife	12,237
Berwickshire	9,159
Prestonpans	8,560
Aberdeen	4,862
Perth	3,600
Blackness	2,069

which was a bumper year for exports. This indicates that, in this one year at least, the Leith precinct exported more grain than any other on the east coast, although the evidence for the expansion of the coastal grain trade suggests that much of this grain may have originated from outside the Firth of Forth.

9.5 THE MARKET AREAS OF OTHER URBAN CENTRES

The pre-eminence of the Edinburgh grain market in the later seventeenth century is shown when the market hinterlands of the other large east-coast burghs are compared with that of Edinburgh. Dundee, Montrose and Aberdeen (Maps 9.3-9.5) each had a fairly small hinterland of estates with which a regular trade was carried on. The importance of supply by overland transport appears to have been much greater for these burghs than for Edinburgh. This immediate hinterland is quite distinct for Aberdeen, but those of Dundee and Montrose overlap considerably. The Moray Firth coast does not appear to have been included within the hinterland of any particular town, probably on account of its distance from any large burgh. Merchants from all the North-Eastern burghs as well as Edinburgh were in competition in this area. Towards the end of the eighteenth century the pull of the Edinburgh market affected even the estates such as Panmure and Belhelvie, which were within the immediate hinterland of the larger North-Eastern burghs.

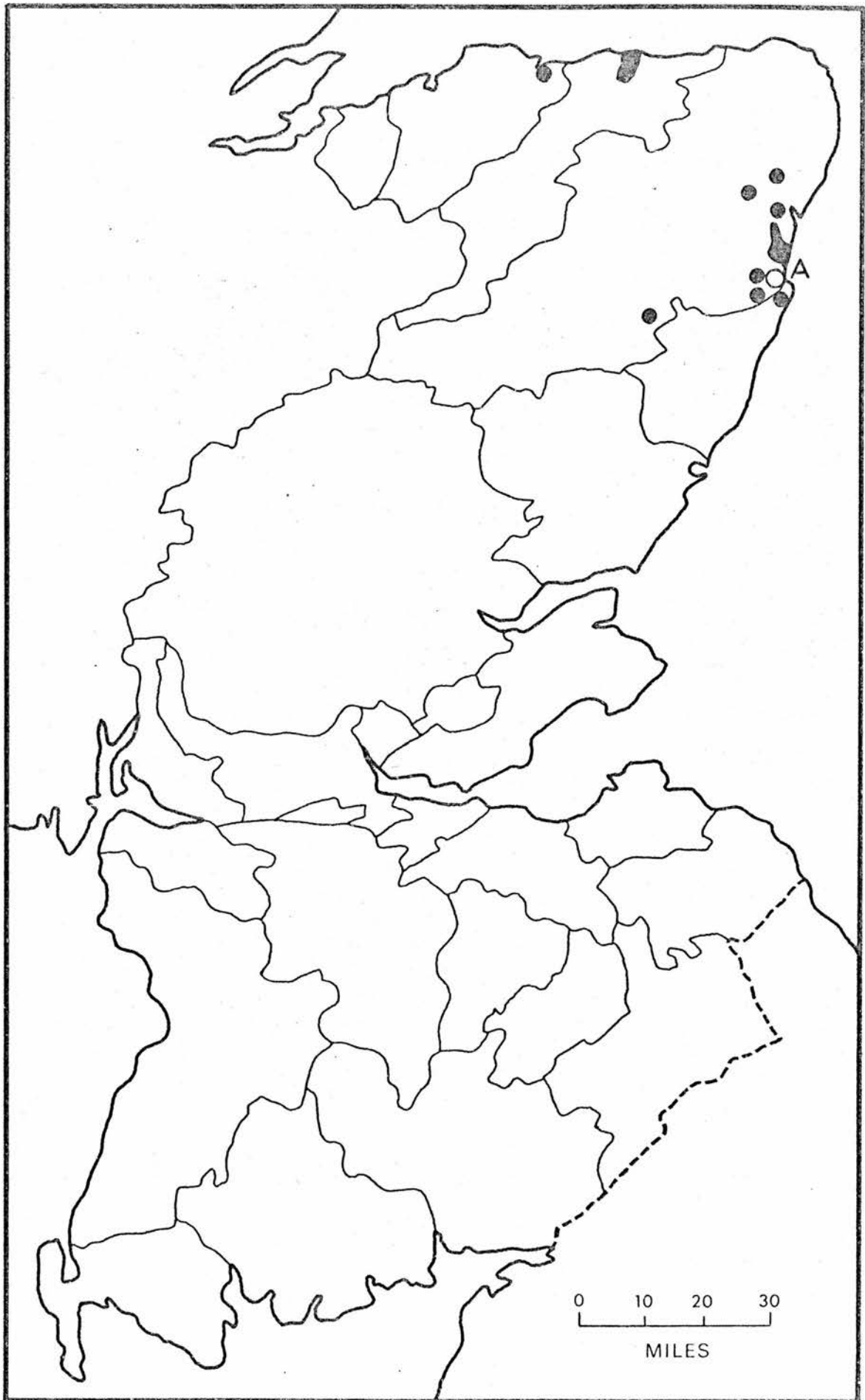
An interesting development which began in the late 1680s was the

67. R.P.C. 3rd series vii (1682) p.484

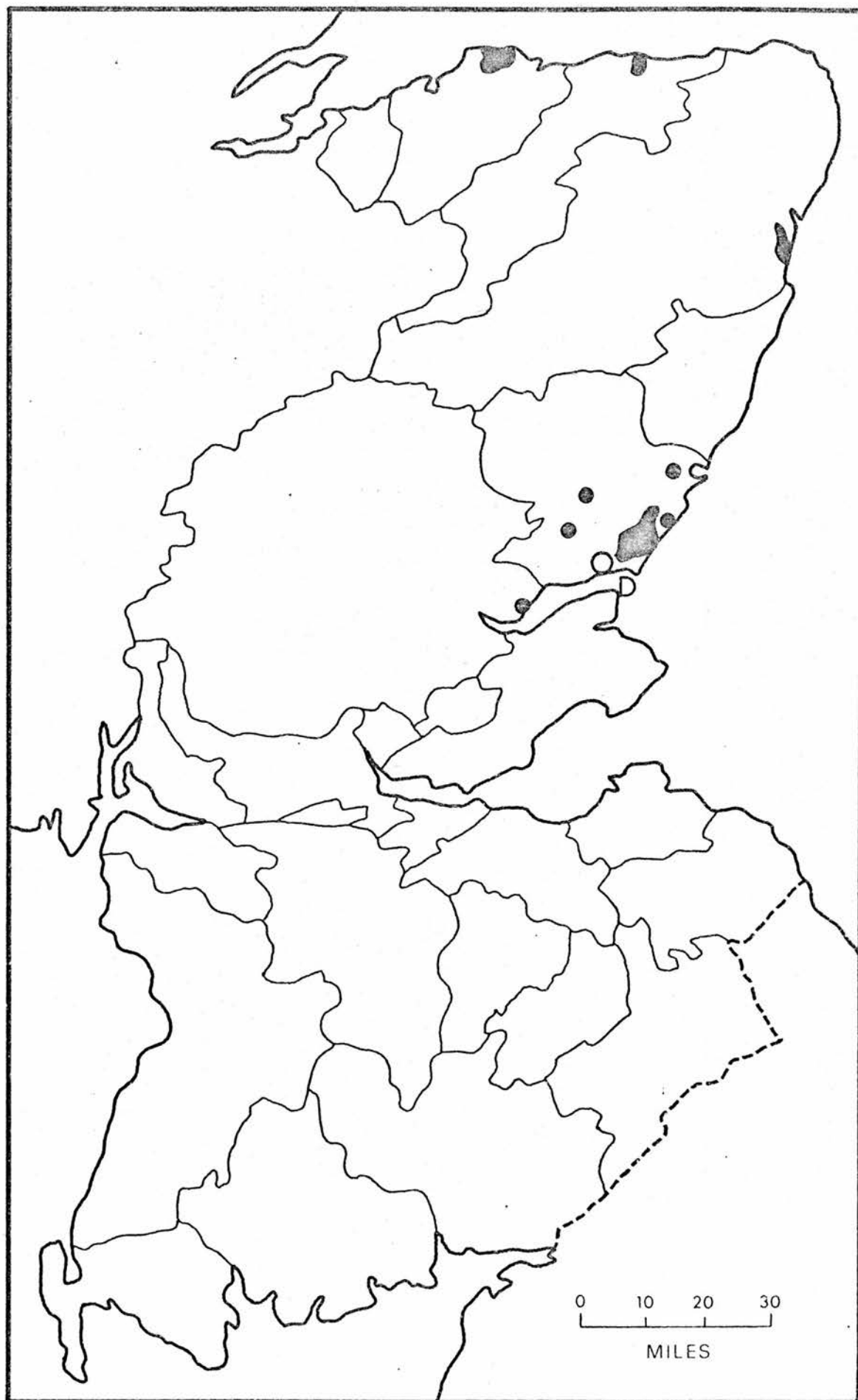
68. S.R.O. Dalhousie muniments GD 45 18 71 (1677)

69. Smout T.C. (1963) *op.cit.* p.210

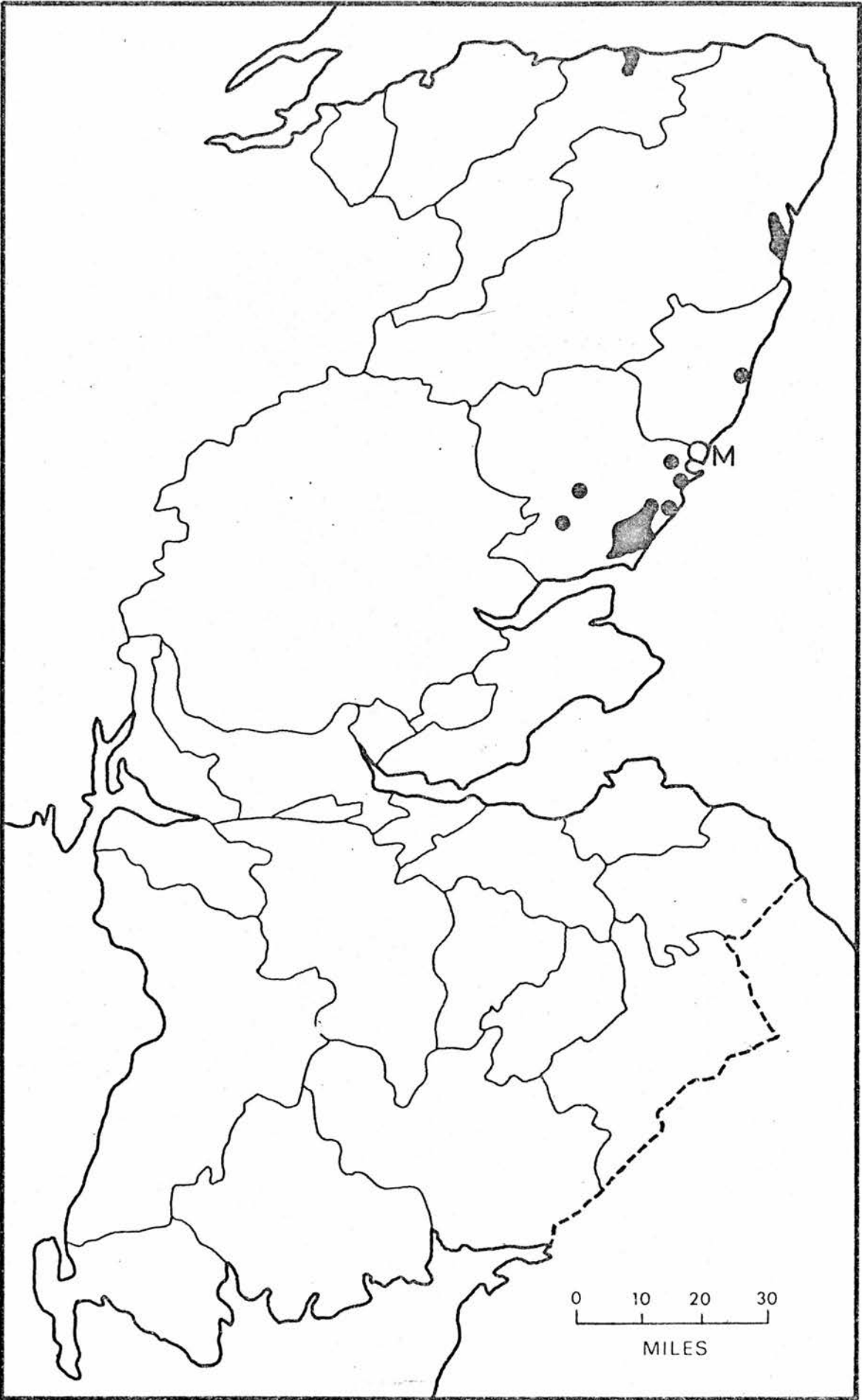
MAP 9·3 THE ABERDEEN GRAIN MARKET



MAP 9.4 THE DUNDEE GRAIN MARKET



MAP 9.5 THE MONTROSE GRAIN MARKET



expansion of the Glasgow grain market to include the east coast of Scotland. Prior to this period, Glasgow merchants appear to have had some dealings with estates which lay at the head of the Firth of Forth, around Stirling and Falkirk (70). The grain which they bought was probably carried overland rather than by sea. However, from 1689 and continuing regularly to the end of the century, the Panmure and Kellie estates began to find a market for their grain with Glasgow merchants (71). In this case, the grain must have been shipped round the north of Scotland. It has not been possible to study the state of the Glasgow grain market earlier in the century due to the paucity of estate accounts for western Lowland Scotland. However Smout has suggested that Glasgow was the fastest growing town in Scotland in the seventeenth century, and the increase in its share of the taxation paid by the royal burghs supports this (72). It is also certain that this expansion of population was paralleled by industrial growth, brewing being one of the industries which are known to have developed (73). It is reasonable to suppose that there was an increase in the size of the Glasgow grain market which paralleled that of Edinburgh. However, the rent structures of estates in the south-western Lowlands (Map 8.1) suggest that the area which concentrated on the production of grain was much more limited in western than in eastern Lowland Scotland. In view of the differences in climate between these areas, this is hardly surprising (74). If this was the case then it is possible that the

70. S.R.O. Airlie muniments GD 16 30 44 (1649)

71. S.R.O. Dalhousie muniments GD 45 18 33 (1689)

72. Smout T.C. (1963) *op.cit.* p.144

73. *Ibid.*

74. Kinghorn W.O. Agriculture in Scotland in *Natural Resources in Scotland Symposium at the Royal Society of Edinburgh* (1960), p.241

demand of the Glasgow grain market was, by the end of the seventeenth century, outstripping the capacity of its west-coast hinterland to supply it. The Privy Council steadfastly refused to allow imports of Irish grain into west-coast ports (75). The fact that cargoes of grain were still smuggled into Ayrshire and the Clyde ports, despite the stern preventative measures taken by the Council (76), suggests that there was an acute shortage of grain in the Glasgow area by the late 1670s and early 1680s. This may have caused grain merchants to seek the more distant grain-producing areas of the east coast.

9.6 THE EXPORT MARKET

There is likewise evidence for an expansion of the export trade in grain throughout the seventeenth century. Smout and Fenton have indicated that the trade was almost non-existent in the second half of the sixteenth century but that there was a marked expansion in the first half of the seventeenth century (77). This trend was continued in the later seventeenth century with extremely large quantities of grain being sent abroad in some years, notably 1685 (78). The year-to-year figures for the export trade were probably somewhat erratic. They depended in great measure upon the success or failure of the harvest. Following a poor harvest the Privy Council generally took immediate action to ensure that there would be as little shortage of grain on the home market as possible by banning

75. Eg. R.P.C. 3rd series v (1676) p.1
and R.P.C. 3rd series viii (1683) p.411

76. R.P.C. 3rd series vi (1679) p.348

77. Smout T.C. and Fenton A. (1965) *op.cit.* p.76

78. Smout T.C. (1963) *op.cit.* p.210

the export of grain (79). This kept prices at home as low as possible without resorting to the import of grain, with its consequent loss of foreign exchange. If the harvest failure was a serious one, then the ban upon the import of grain would have to be lifted as well (80). Political events could also interrupt the export trade. In 1685 exports were temporarily banned, and some grain was imported from Ireland due to the threatened invasion of the west coast by the Earl of Argyll, and to the consequent mobilisation of the militia (81). The Revolution of 1688 and the military campaigns of 1688-90 had a similar effect (82) although, in this case, matters may have been made worse by a series of bad harvests in parts of Scotland between 1688 and 1690 (83).

The expansion of the export trade in grain does not appear to have been caused by any fundamental changes in the state of the European grain market so much as by the increases in production at home. These were sufficient to meet fully the demands of the home market in most years, despite its growth. By the 1680s it appears that the home market had become so saturated with grain that Scottish producers were finding the low prices a hindrance (84). Thus, although the home market was probably more attractive than the export market for the sale of grain surpluses, due to the greater risk and higher cost of foreign ventures, once prices had fallen there was every incentive to export grain whenever

79. R.P.C. 3rd series xi (1685) p.56

80. Ibid.

81. Ibid.

82. R.P.C. 3rd series xvi (1691) p.6

83. This is suggested by several references in the Buccleuch muniments to damage to crops caused by heavy rain, floods and gales between 1688 and 1690, eg. S.R.O. Buccleuch muniments GD 224 935 2 (1690 and 1689)

84. R.P.C. 3rd series vii (1682) p.670

possible. Exported grain was a valuable source of foreign exchange to a country which had to import most of her manufactured goods and some of her staple raw materials such as timber and iron.

The relatively secure position of the supply of grain to the home market between 1660 and about 1695 encouraged the Privy Council to adopt a more positive attitude towards the grain trade by banning the import of foreign grain more or less permanently unless by prior approval in years of dearth, and by offering bounties for the export of grain (85). The crisis of the later 1690s reversed this trend, but only for a short period. If the "Seven Ill Years" are regarded as an exceptional and isolated occurrence, the trend which had begun in the years following the Restoration continued into the eighteenth century, and it looks as if Lowland Scotland had finally succeeded in overcoming periodic dearth at home by increasing her grain production faster than demand for it at home was growing.

9.7 CONCLUSION

Jones and Woolf, in a recent wide view of agrarian change, have characterised old peasant economies by their inability to increase agricultural production without a corresponding rise in population (86). They have identified the point at which agricultural production begins to grow faster than population as the turning point at which a modern commercial economy

85. R.P.C. 3rd series vii (1682) p.670

86. Jones E.L. and Woolf S.J. *The Historical Role of Agrarian Change in Agrarian Change and Economic Development* ed. Jones E.L. and Woolf S.J. (1969) pp.1-21

begins to emerge from an old peasant economy (87). They claim that such increases in production eased population pressure and encouraged the rise of a middle class of commercial and industrial entrepreneurs and independent farmers, while stimulating an expansion of the market for manufactured goods. They view these as indispensable precursors of the Industrial Revolution (88).

The trend in grain production in Lowland Scotland in the late seventeenth century appears to reflect this situation. The rising urban markets were, save in exceptional years, supplied by home producers and the country was exporting an increasing surplus over and above this. At this period, the trend was in its infancy, and liable to disastrous setbacks due to unusually severe combinations of short-term weather conditions, as appears to have been the case with the "Seven Ill Years", or to political upheavals like the Revolution of 1688 and the eighteenth-century Jacobite rebellions. However, it appears to have been a modest and protracted start to a trend whose acceleration in the late eighteenth century heralded the spectacular achievements of the Industrial Revolution.

87. Jones E.L. and Woolf S.J. (1969) *op.cit.* p.4

88. *Ibid.* pp.5-6

CONCLUSION

The foregoing chapters have considered various facets of the agrarian economy of Lowland Scotland during the seventeenth century. In virtually every aspect of agriculture which has been studied, a substantial degree of change has been demonstrated, particularly during the late seventeenth century. Between the Restoration and the end of the century the Scottish Parliament introduced a carefully organised body of legislation which was designed to encourage agricultural improvement, particularly with regard to enclosure, the planting of trees, and the consolidation of estates. The evidence suggests that this legislation achieved a fair measure of success although the full impact of the statutes which formed the culmination of this policy, the Division of Runrig and Commonty acts of 1695, was not felt until long after the Union.

Estate management appears to have undergone relatively little development during this period. Presumably the changes which occurred in other branches of agriculture were not sufficient to require a major reorganisation of the estate hierarchy. It is clear however, that the structure of estate management was sufficiently flexible to incorporate the new developments in agriculture and the organisation of rural society without visible strain.

The major change in crop production was the introduction of new fertilizers and the development of more efficient crop rotations incorporating legume and fallow courses. This appears to have revolutionised grain

production in many parts of the eastern Lowlands and to have led to a considerable expansion in production which had a significant effect upon Scotland's food supply and trade. The high yields which were obtained from these new methods represented, over limited areas, a major breakthrough from subsistence to commercial production.

Changes also occurred at the margins of cultivation. The evidence for the expansion of the arable area is fragmentary but there is enough to suggest that the acreage of arable land increased significantly, particularly with the reclamation of pasture by liming and the division of common-ties. Developments in pastoral farming were in general less striking than in the arable sector of the economy, but the growth of the English market for live animals led to the rise of the droving trade. This involved a number of estates in Galloway and the Borders. By the end of the century the Highlands were also beginning to supply animals to England as well as to the slowly growing urban market at home.

Experiment in agriculture was carried out almost entirely by the landowners, the only class of people who had the reserves of capital to allow this. In association with the improvement of their country houses, many landowners undertook programmes of enclosure and planting in the period of peace and prosperity following the Restoration. The enclosures which they constructed were in many cases ornamental. However, in some areas such as Galloway, they were directly linked to the improved feeding of animals for the droving trade. On other estates new techniques were tried, the most significant of which was convertible husbandry. This represented the first real break with the infield-outfield system and although it was only conducted on a small scale, a body of experience

under Scottish conditions was being built up which may have contributed significantly towards eighteenth-century developments. The late seventeenth century also saw the first attempts at planting on a commercial scale.

One of the major drawbacks to the development of Scottish agriculture had been the insecure state of the tenantry. This was progressively remedied during the seventeenth century with the widespread introduction of written leases. By the end of the century these had almost completely ousted verbal agreements on some estates. During the same period there was a steady increase in the number of long leases which were being granted to tenants.

Other developments in the organisation of farming are also evident. In east-coast arable areas, progressive consolidation and farm amalgamation had modified the agrarian landscape by reducing tenant runrig and dispersing farmsteads from the old communal ferm-touns. The increase of holding sizes in the interests of efficiency in areas which concentrated upon grain production had begun to give rise to a class of prosperous tenant farmers who were the forerunners of the middle-class capitalist farmers who emerged from the Agricultural Revolution.

All these changes in agriculture were reflected in the developments which occurred in marketing during the seventeenth-century. There was a dramatic increase in the number of rural trading centres, particularly after the Restoration, reflecting the growth of a more commercially-orientated economy. The improved structure of marketing in turn affected rural society by encouraging the widespread commutation into money of rents in kind.

The increases in grain production which have already been considered

were sufficient, by the end of the seventeenth century, to glut the home market with cheap grain in most years. This reduced famine, prevented a loss of foreign exchange through the import of grain from abroad, and encouraged the export of surplus grain which further strengthened Scotland's trading position. This situation was sometimes reversed in the short-term, as in the uniquely severe harvest failures of the late 1690s. However, in the long-term, grain production appeared to have been rising faster than population by the early eighteenth century. This situation has been identified as the turning point at which a modern commercial economy begins to emerge from an old peasant economy. In Scotland, this state appears to have been reached sometime between the Restoration in 1660 and the Union in 1707. This theory, taken in a wider sense, sums up the developments which took place in Scottish agriculture during the seventeenth century.

The evidence which has been presented above demonstrates that there was indeed a considerable degree of agrarian change in Lowland Scotland during the seventeenth century. Returning to the statement of intent which was made in the introduction, it is clear that the hypothesis put forward by writers such as Franklin and Symon, namely, that agriculture during this period was stagnant or in decline, does not accord with the evidence. On the other hand, the alternative hypothesis which was proposed by Smout and Fenton, that there was a significant degree of agrarian change in Scotland during this period, has not only been confirmed but has been considerably amplified.

To consider again Rostow's model of economic growth, it appears that the take-off period for the Agricultural Revolution in Scotland can be

pushed back from the mid-eighteenth to the mid-seventeenth century. This take-off was a very protracted and faltering one, but despite this a sequence of developments, interrupted from time to time by political and economic crises, can be traced back to the period following the Restoration, and in some respects to the introduction of liming in the 1620s and 1630s. The short-term disasters produced by the Civil Wars and the harvest failures of the late 1690s were undoubtedly serious in their effects, for the agrarian economy had not developed sufficiently to take such reverses in its stride. However, they affected the general trend only temporarily. All the evidence points to a slow acceleration in the agrarian economy during the seventeenth century. This acceleration was to some extent apparent to contemporaries, but is much more readily discernible with a perspective of three centuries.

Nevertheless, the seventeenth-century developments in agriculture must not be viewed out of context. The achievements of this period were modest indeed in comparison with those of the eighteenth century, and their limited scale must always be borne in mind. However, this should not be allowed to obscure the probability that in many ways agrarian change in the seventeenth century laid the foundations upon which the eighteenth-century Improvers were to build. The fact that the Improvers themselves refused to recognise this, either out of prejudice or due to their limited perspective, does not alter this. The evidence which has been advanced indicates that the role of the seventeenth century in the development of agriculture in Scotland must now be substantially re-assessed.

SUGGESTIONS FOR FURTHER WORK

Many of the imperfections of the present study arise from its attempt to deal with a subject as broad as agriculture spread over a century of time and twenty-five counties. Considerable gaps in coverage have resulted both spatially and temporally. There is a need for more detailed regional studies to be undertaken utilising both the estate papers available in Edinburgh and those still remaining in private hands. Such work will probably modify many of the generalisations which have been made in this thesis.

There is also a need to tackle specific problems in greater depth and to attempt to answer some of the questions which have not been posed in the present research. This could be achieved, at least in part, by the study of new sources which have not been exploited as yet. For instance, it is likely that the effects of the seventeenth-century legislation for agricultural improvement will be understood more clearly once a detailed study of the Sheriff Court records has been undertaken. There are probably many other sources which could provide material of great value to a study of seventeenth-century agriculture. For example, the Records of Testaments must contain a great deal of information about the possessions of tenant farmers and a detailed study of the agricultural equipment possessed by tenants whose inventories have survived would be of great value.

Although it has been stated in the introduction that more is known about agriculture on the medieval monastic estates than during the seventeenth century, very little work has been done on pre-seventeenth-century agriculture in absolute terms. The complete re-appraisal of agriculture in

seventeenth-century Scotland which has proved necessary following this study of the primary source material, suggests that a critical look ought to be taken at the evidence for agriculture in earlier periods. It is felt that there is a strong likelihood that the quantity of evidence which has survived has been substantially underestimated, as has been the case with the seventeenth century, and that some previous ideas might be revised as a consequence of such a study.

No matter what uncertainties still exist regarding agriculture in Scotland during the seventeenth century and at earlier periods, two things are clear: there is no lack of problems and no shortage of unexplored sources which may help to solve them.

APPENDIX I

SOME SIGNIFICANT DATES IN SCOTTISH HISTORY 1560-1707

Date	Event	Agrarian legislation
1560	The Reformation	
1561	Mary, Queen of Scots returns to Scotland	
1567	Flight of Mary to England	
1587	James VI reaches majority	
1596	Rescue of Kinmont Willie from Carlisle Castle: the last great Border raid	
1603	Union of the Crowns	
1625	Accession of Charles I	
1633		Teind act
1638	Signing of the National Covenant	
1641		Pow of Inchaffray drainage act
1644	Army of the Covenant enters England	
1644-45	Campaigns of Montrose	
1647		Limited division of commonty act
1650	Cromwell's invasion: Battle of Dunbar	
1651-60	Cromwellian occupation	
1660	Restoration of Charles II	
1661		General enclosure act

Date	Event	Agrarian legislation
1663		Export of grain and cattle act
1666	Rising of Covenanters in Galloway	
1669		Act for straightening marches
1679	Covenanter's rising: Battle of Bothwell Bridge	
1685	Accession of James VII	Act for sowing peas
1686		Act for winter herding
1688	The Revolution: accession of William and Mary	
1689	Battle of Killiekrankie: break-up of Jacobite army	
1690	The Claim of Rights	
1692	Massacre of Glencoe	
1695	Launching of the Darien Scheme	Act for preservation of meadows and pastures adjacent to sand hills
	Foundation of the Bank of Scotland	Division of runrig act
	First harvest failure of the "Seven Ill Years"	Division of commonty act
1700	Final failure of the Darien Scheme	
1702	Accession of Queen Anne	
1707	Union of the Parliaments	

APPENDIX II

GLOSSARY OF SOME SEVENTEENTH-CENTURY TERMS
USED IN THIS THESIS

The use of Scots vernacular terms has been avoided, as far as possible, to avoid confusion. Where such terms have been introduced they have generally been defined clearly. However, some words necessarily occur fairly frequently and they have been listed here for convenience. The definitions which have been given are the author's unless otherwise stated and are based on the use of the terms in seventeenth-century sources. They do not necessarily correspond exactly with the definitions given in either the Dictionary of the Older Scottish Tongue, or the Scottish National Dictionary, which tend to be broader in their scope.

ARIAGE (arrage, harrage)

Labour services due from tenants excluding carriage services

BAILLIE (bailzie)

Estate officer who presided over the baron court

BERE (bear, beir)

A four-rowed variety of barley

BIRLAY COURT (boorlaw ..)

An informal court operating under the jurisdiction of the baron court to decide minor agricultural disputes

BIRLAYMAN (birlaw, boorlaw)

A trusted and reliable tenant appointed by a proprietor or his officers to give impartial verdicts and sworn statements in disputes between the tenants

BLANDED BERE (blanderred ..)

A mixed crop of bere and barley

BURGH OF BARONY

A burgh under the jurisdiction of a baron (S.N.D.)

BURGH or REGALITY

A burgh under the jurisdiction of a Lord of Regality (S.N.D.)

BURGH, ROYAL

A burgh deriving its charter direct from the Crown (S.N.D.)

BURNTLAND (bruntland)

Land cultivated by paring and burning

CARRIAGE (carrage)

Services involving the transport of goods or messages due by the tenants

COMMONTY (comounty)

Land possessed in common by different proprietors. Sometimes pasture belonging to one person but pastured upon by several others with rights of servitude (Adams I.H.1967)

CHAMBERLAIN (chalmerlane)

Estate officer responsible for the collection of rents

DARG

A day's work of one man in cutting peat, mowing hay etc.

DIVISION OF COMMONTY

To divide a commonty up into separate properties among the landowners having rights to it

DIVISION OF RUNRIG

To consolidate land out of runrig among the proprietors or tenants whose land was intermixed

FACTOR

Estate officer who ran the estate in place of the proprietor

FERME (farme)

Rents paid in grain

FEU-FERME

A feudal tenure where the rent was paid as a fixed sum in perpetuity

FEUAR

The holder of land by feu-ferme tenure

FORRET

A peat-bank

GIRNEL

A storehouse for grain

GRASSUM

A lump sum paid on entry to a lease or feu-ferme tenure

HAINING (hayning)

An enclosure, usually temporary, designed to keep animals out (of grass etc.) rather than in

HEIRS PORTIONER, DECREE OF

The division of heritable property equally among the surviving daughters of a heritor when there was no male heir

HERITOR

An owner of heritable property

LAIRD (lard)	A landed proprietor, generally below the rank of peer
MAIL	Rent paid in money
MAINS	The home-farm of an estate, usually worked by the proprietor but sometimes leased to tenants
MASHLOE (mashlum)	A mixed crop of peas and beans
MARCH	The boundary of an estate or farm, not necessarily marked on the ground
MOSS (mos)	Deep basin peat in upland or lowland situations
MUIR (mure)	Shallow hill peat - the hill pastures on such land
MUIRBURN (mureburn)	The burning of vegetation on hill pasture to improve the grazing
MULTURES	The duty, consisting of a proportion of the grain, exacted by the proprietor or tenant of a mill on all corn ground there (S.N.D.)
PARK	An enclosure, not necessarily ornamental, for animals, grass or crops
POLICY (policie)	The improvement of an estate
POLICIES	The enclosed ornamental grounds in which a large country house is situated (S.N.D.)
PORTIONER	The proprietor of a small estate or piece of land
REGALITY	A jurisdiction much wider than that of a baron granted by the king to a powerful subject, lay or ecclesiastic. The territory subject to such jurisdiction (S.N.D.)
RENTAL	A document listing the farms or tenants on an estate and the rents due from each
RUNRIG (rinrig)	In seventeenth-century usage, runrig appears to refer merely to the fragmentation of land without necessarily any implication of periodic re-allocation
STEELBOW (steilbow)	The granting by a proprietor to a tenant of capital equipment (including livestock and grain) at the entry to a lease, the value of which was to be returned at the end of the lease

STEELBOW STRAW

The straw left by an outgoing tenant to maintain the animals of the incoming tenant over the first winter

SOUMING (sowming)

The limit upon the number of animals which tenants or proprietor could graze on commony or common pasture

TACK (tak) A lease of property, customs, fisheries, teinds etc.

TEINDS (teynds)

Tithes

THIRLAGE The process by which proprietors bound their tenants to grind their grain at a particular mill on the estate

WADSET To exchange the use of lands for the loan of a capital sum, subject to reversion

LAND MEASUREMENT

DAVOCH	4 ploughgates
PLOUGHGATE	8 oxgangs or oxgates
HUSBANDLAND	2 oxgangs
OXGANG	13 Scots acres
SCOTS ACRE	about 1 1/4 English acres
DEAL or DALE	2 rigs
RIG	1/4 Scots acre (in theory)

GRAIN MEASUREMENT

(Linlithgow measure)

CHALDER	8 bolls
BOLL	4 firlots (or 112 lbs Troy weight)
FIRLOT	4 pecks
PECK	4 lippies or capfuls

MONEY

As far as is known, £12 Scots was roughly equal to £1 Sterling throughout the seventeenth century

APPENDIX III

LIST OF MANUSCRIPT ESTATE COLLECTIONS CONSULTED

PART I COLLECTIONS IN THE SCOTTISH RECORD OFFICE

Name of collection	S.R.O. ref.no.	Handlisted or inventoried
Abercairney muniments	GD 24	I
Agnew of Lochnaw muniments	GD 154	I
Ailsa muniments	GD 25	I
Airlie muniments	GD 16	I
Bargany muniments	GD 109	I
Biel muniments	GD 6	I
Blair of Blair muniments	GD 167	H
Blebo writs	GD 7	H
Boyd of Kilmarnock muniments	GD 8	I
Brodie of Lethen muniments	GD 247	H
Broughton and Cally muniments	GD 10	I
Buccleuch muniments	GD 224	H
Cathcart of Genoch and Knockdolian muniments	GD 180	I
Clerk of Penicuik muniments	GD 18	I
Cochrane of Ruchsoles muniments	GD 237	H
Cunningham of Thornton muniments	GD 21	I
Dalguise muniments	GD 38	I
Dalhousie muniments	GD 45	I

Name of collection	S.R.O. ref.no.	Handlisted or inventoried
Dick-Lauder muniments	GD 41	I
Don of Newton muniments	GD 237	H
Dundas of Dundas muniments	GD 75	I
Edmonstone of Duntreath muniments	GD 97	I
Fairlie of Fairlie muniments	GD 237	H
Ferguson of Craigdarroch muniments	GD 77	I
Forbes muniments	GD 52	I
Fraser charters	GD 86	I
Garden of Troup muniments	GD 57	I
Gordon muniments	GD 44	I
Guthrie of Guthrie muniments	GD 188	H
Haddo muniments	GD 33	I
Hamilton muniments	GD 237	H
Hamilton-Dalrymple of North Berwick muniments	GD 110	I
Hay of Belton muniments	GD 73	I
Hay of Haystoun muniments	GD 34	I
Hay of Yester muniments	GD 28	I
Herries of Mabie muniments	GD 237	H
Keith Marischal muniments	GD 54	I
Kinross muniments	GD 29	I
Leven muniments	GD 26	I
Lindsay of Dowhill muniments	GD 254	H
Lintrose muniments	GD 68	I

Name of collection	S.R.O. ref.no.	Handlisted or inventoried
Lockhart of Cleghorn muniments	GD 237	H
Macfarlane of Ballancleroch muniments	GD 61	I
Makgill muniments	GD 82	I
MacPherson of Cluny papers	GD 80	I
Mar and Kellie muniments	GD 124	I
Mey papers	GD 96	I
Morison of Bognie muniments	GD 57	I
Morton muniments	GD 150	I
Northesk muniments	GD 130	I
Pitcaple charters	GD 108	I
Pitfodels muniments	GD 237	H
Rose of Kilravock muniments	GD 125	H
Rose of Montcoffer muniments	GD 36	I
Ross muniments	GD 47	I
Ross of Arnage muniments	GD 186	H
Ruthven of Freeland muniments	GD 244	H
Scott of Benholme muniments	GD 4	I
Scott of Gala muniments	GD 237	H
Scott of Mangerton muniments	GD 237	H
Scott of Raeburn muniments	GD 104	I
Seafield muniments	GD 248	H
Shairp of Houston muniments	GD 30	I
Skene of Ruberslaw muniments	GD 244	H
Skirling writs	GD 89	I

<u>Name of collection</u>	<u>S.R.O. ref.no.</u>	<u>Handlisted or inventoried</u>
Stair muniments	GD 135	H
Turing of Foveran muniments	GD 57	I
Urquhart muniments	GD 94	I

PART II COLLECTIONS IN THE NATIONAL LIBRARY OF SCOTLAND

<u>Name of collection</u>	<u>National Library ref.no.</u>
Ballikinrain Court Book	NL MS 9303
Callender estate papers	NL MS 9635, 9637, 9639
Castlemilk estate accounts	NL MS 8218
Court book of barony of Calder	NL MS 3724-3725
Culloden estate accounts	NL MS 2971
Ecclefechan and Hoddan division of commonty	NL MS 3085
Elliot of Stobs papers	NL MS 1634, 2987
Glassford estate accounts	NL MS 8198
Kerr estate accounts	NL MS 5412, 5413
Minto muniments	Listed separately
Pitfirrane estate accounts	NL MS 6424-6427
Scott of Raeburn papers	NL MS 2891, 3842
Torrance estate muniments	NL MS 8217

PART III MISCELLANEOUS MANUSCRIPT SOURCES

Sir Robert Sibbald Discourse Anent the Improvements May Be Made
in Scotland for Advancing the Wealth of the
Kingdom (1698) NL MS 33.5.16

Court Book of the Barony of Corshill S.R.O. GD 1/300

S.R.O. Exchequer Records:

<u>Customs precinct</u>	<u>S.R.O. ref.no.</u>
Aberdeen	E 72 1 5-7, 9-13, 17, 18, 20
Alisonbank	E 72 2 1, 6, 7, 10-14, 17, 20, 21, 23
Ayton and Duns	E 72 4 1, 2, 5-7, 9-11, 14, 15
Blackness	E 72 5 27
Dumfries	E 72 6 3, 4, 7-10, 14, 19, 23
Dundee	E 72 7 6, 8, 11, 13, 15, 17, 19, 23, 25
Fife	E 72 9 19
Jedburgh	E 72 13 2, 3, 5-13, 15-17
Kelso	E 72 14 2-11, 13, 15, 18, 20
Leith	E 72 15 6, 32
Montrose	E 72 16 5, 7, 9, 13, 15, 17, 21, 24
Perth	E 72 18 4
Prestonpans	E 72 21 8

APPENDIX IV

LIST OF PRINTED SEVENTEENTH-CENTURY
SOURCES CONSULTED

1. STATE PAPERS

The Acts of the Parliaments of Scotland Vols.I-XI

The Register of the Privy Council of Scotland 3rd series Vols.I-XVI

The Exchequer Rolls of Scotland Vol.XXIII

2. GRAMPIAN CLUB

1880 The Rental Book of the Cistercian Abbey of Coupar Angus
ed. Rogers C.

3. MAITLAND CLUB

1830 The Diary of Mr John Lamont of Newton 1649-71

1831 The Chronicle of Perth 1210-1668

1831 Description of the Sherifffdoms of Lanark and Renfrew
Hamilton W. c.1710

1834 Records of the Burgh of Prestwick

1835 Reports on the State of Certain Parishes in Scotland 1627

1842 The Coltness Collections

1854 The Caldwell Papers

4. SCOTTISH BURGH RECORD SOCIETY

1881 Register Containeing the State and Conditions of Every
Burgh Within the Kingdome of Scotland in the Year 1692
Misc.Scot.Burgh Rec.Soc. pp.56-156

- 1893 Extracts from the Records of the Royal Burgh of Lanark
1150-1722
- 1910 Extracts from the Records of the Burgh of Peebles
1652-1714

5. SCOTTISH HISTORY SOCIETY

First Series

- 1887 2 Diary and General Expenditure Book of William Cunningham of Craigends ed. Dodds J.
- 1890 10 The Glamis Book of Record 1684-89 ed. Miller A.H.
- 1892 12 The Court Book of the Barony of Urie 1604-1747
ed. Barron D.G.
- 1894 16 The Account Book of Sir John Foulis of Ravenston
1671-1707 ed. Hallen A.W.C.
- 1898 28 Compt Book of David Wedderburn, Merchant of Dundee
ed. Millar A.H.
- 1899 31 Scotland and the Protectorate 1654-1659 ed. Firth
C.H.
- 1901 39 Hay of Craignethan's Diary 1659-60 ed. Reid A.G.
- 1905 46 Records of the Scottish Cloth Manufactory at New
Mills, Haddingtonshire, 1681-1703 ed. Scott W.R.
- 1905 50 Records of the Baron Court of Stichill ed. Gunn C.B.
- 190 51-53 Macfarlane's Geographical Collections ed. Sir
Arthur Mitchell 3 vols.

Second Series

- 1912 3 The Seafield Correspondence 1685-1708 ed. Grant J.
- 1914 6 Melrose Regality Records ed. Romanes C.S.
- 1915 8 3 vols.
- 1917 13
- 1919 19 The Forbes Baron Court Book Misc.S.H.S.III pp.224-
321

Third Series

- 1963 The Court Book of the Burgh of Kirkintilloch 1658-1694
ed. Pryde G.S.

6. SPALDING CLUB and NEW SPALDING CLUB

- 1842 Description of the Present State of Monymusk and What Hath
 Been Done to Make it what it is Sir Archibald Grant of
 Monymusk 1716 Spald.Club Misc. II p.96
- 1844 List of Pollable Persons Within the Shire of Aberdeen, 1696
- 1848 A Genealogical Deduction of the Family of Rose of Kilravock
- 1849 Rental of the Lordship of Huntly 1600 Misc.Spald.Club
 IV pp.261-319
- 1852 Extracts from the Court Book of the Barony of Skene and
 Leyes Spald.Club Misc. V pp.217-238
- 1859 The Book of the Thanes of Cawdor
- 1862 Illustrations of the Topography and Antiquities of the Shires
 of Aberdeen and Banff IV p.425 (Rental of Forbes estate)
- 1864 Ane Account of the Familie of Innes Duncan Forbes of
 Culloden (1698)
- 1891 The Annals of Banff ed. Cramond W.
- 1894 The Records of Aboyne ed. Charles, 11th Marquis of
 Huntly
- 1901 The Records of Invercauld ed. Michie J.G.
- 1903 The Records of Elgin ed. Cramond W.
- 1924 The Records of Inverness ed. Mackay W. and Laing G.S.

7. SCOTTISH RECORD SOCIETY

- 1938 The Binns Papers and the Foulis Papers ed. Sir James
 Dalyell of Binns and Beveridge J.
- 1948 Inventory of the Principal Progress-Writs of the Barony of
 Innes ed. Sir Thomas Innes

7. FAMILY GENEALOGICAL WORKS

1858	Fraser W.	The Stirlings of Keir
1863	"	Memoirs of the Maxwells of Pollock
1874	"	The Lennox
1878	"	The Scotts of Buccleuch
1880	"	The Red Book of Menteith
1883	"	The Chiefs of Grant
1889	Sir Wm. Fraser	Memorials of the Earls of Haddington
1890	"	The Melvilles, Earls of Melville and The Leslie's, Earls of Leven
1894	"	The Annandale Family Book
1897	"	The Elphinstone Family Book

9. MISCELLANEOUS

Anderson P.	The Copie of a Baron's Court Newly Translated by Whats-You-Call-Him, Clerk to the Same
Auchterlonie J.	Account of the Shire of Forfar 1684 in Warden A.J. Angus or Forfarshire (1861) II pp.252-276
Boece H.	The Boundis of Albioun (1527) in Brown P.H. Scotland Before 1700 (1893) pp.64-104
Brereton, Sir Wm.	Account of a Journey in Scotland (1636) in Brown P.H. Early Travellers in Scotland (1891) pp.132-158
Buchanan G.	Description of Scotland (1582) in Brown P.H. Scotland Before 1700 (1893) pp.219-233
Camden W.	Description of Scotland 2nd edn. (1695)
Donaldson J.	Husbandry Anatomised or An Enquiry into the Present Manner of Teiling and Manuring the Ground in Scotland (1697)

- Drummond, Lady Anne An Account of Buchan and What is Remarkable
 Therein (1680) in Collections for a History of the
 Shires of Aberdeen and Banff Spalding Club (1843)
 pp.94-99
- Edwards R. Description of the County of Angus (1678) in Warden
 A.J. Angus or Forfarshire (1861) pp.232-250
- Fletcher, Andrew Two Discourses Concerning the Affairs of Scotland
 of Saltoun (1698)
- Scotland's Interest or The Great Benefit of a Com-
 munication of Trade with England (1704)
- Forbes, Sir Samuel Description of Aberdeenshire (1716) in Collections
 of Foveran for a history of the Shires of Aberdeen and Banff
 Spalding Club (1843) pp.31-59
- Franck R. Account of Scotland (1656) in Brown P.H. Early
 Travellers in Scotland (1891) pp.184-216
- Gordon, Alexander An Account of the North Side of the Coast of Buchan
 of Troup (1663) in Collections for a history of the Shires of
 Aberdeen and Banff Spalding Club (1843) pp.99-107
- Hamilton J. The Countrey Man's Rudiments, or an Advice to the
 Lord Belhaven Farmers of East Lothian How to Labour and Improve
 their Ground (1699)
- Kirke T. Tour in Scotland (1677) ed. Brown P.H. (1892)
- A Modern Account of Scotland by an English Gentle-
 man (1679) in Brown P.H. Early Travellers in
 Scotland (1891) pp.251-265
- Leslie, Bishop History of Scotland (1578) in Brown P.H. Scotland
 Before 1700 (1893) pp.114-183
- Lithgow J. Description of Scotland (1628) in Brown P.H.
 Early Descriptions of Scotland (1893) pp.295-302
- Lowther C. Our Journall into Scotland (1629)
- Fallow R.
Mauson P.
- Major J. Description of Scotland (1521) in Brown P.H.
 Scotland Before 1700 (1893) pp.42-61
- Morer T. A Short Account of Scotland (1689) in Brown P.H.
 Early Travellers in Scotland (1891) pp.266-290

- Moryson F. Account of Scotland (1598) in Brown P.H. Early Travellers in Scotland (1891) pp.81-90
- Napier, Archibald of Merchiston The New Order of Gooding and Manuring All Sorts of Field Land with Common Salt *Archaeologica Scotica* I (1792) pp.154-158
- Ray J. Select Remains of the Learned John Ray (1662) in Brown P.H. Early Travellers in Scotland (1891) pp.230-240
- Sibbald, Sir Robert Provision for the Poor in Time of Dearth and Scarcity (1699)
- Skene of Hallyards Manuscript of Husbandrie ed. Fenton A. *Ag.H.R.* XI (1963) pp.67-78
- Stoddart R.R. Memorials of the Browns of Fordell (1887)
- Taylor J. The Pennyless Pilgrimage of John Taylor the Water Poet (1616) in Brown P.H. Early Travellers in Scotland (1891) pp.108-124
- Tucker T. Report by Thomas Tucker Upon the Settlement of the Revenues of Excise and Customs in Scotland (1655) in Brown P.H. Early Travellers in Scotland (1891) pp.163-178

APPENDIX V

LIST OF POST-SEVENTEENTH-CENTURY
WORKS CONSULTED

- Adams I.H. (1967) Division of Commonry in Scotland Unpublished Ph.D. thesis, University of Edinburgh
- (1969) The Disappearance of Runrig in Scotland Paper presented to I.B.G. Agrarian Landscape Research Group conference, Carberry Tower
- (1971) The Division of the Commonry of Hassendean 1761-1763 Stair Society Miscellany I pp.172-176
- Aiton W. (1811) General View of the Agriculture of the County of Ayr
- Anderson M.L. (1967) A History of Scottish Forestry
- Barrow G.W.S. (1962) Rural Settlement in Central and Eastern Scotland Scot.Stud. VI pp.123-144
- Buchan-Hepburn G. (1795) A General View of the Agriculture and Rural Economy of East Lothian
- Caird J.B. (1964) The Making of the Scottish Rural Landscape S.G.M. LXXX pp.72-80
- Carter I. (1971) Economic Models and the Recent History of the Highlands Scot.Stud. XV pp.90-120
- Chambers R. (1874) Domestic Annals of Scotland 3 vols.
- Clark C. and Haswell M. (1964) The Economics of Subsistence Agriculture
- Clyde J.A. (1934) The Jus Feudale of Sir Thomas Craig of Riccarton
- Conacher H.M. (1938) Land Tenure in Scotland in the Seventeenth Century Juridical Review L.
- Cormack A.A. (1930) Teinds and Agriculture, an Historical Survey
- Cox E.H.M. (1935) A History of Gardening in Scotland
- Dand C.H. (1972) The Mighty Affair

- Darby H.C. (1940) The Draining of the Fens
- Dicey A.V. and Rait R.S. (1920) Thoughts on the Union Between England and Scotland
- Dickinson W.C. (1961) Scotland From the Earliest Times to 1603
- Dodgshon R.A. (1969) Agricultural Change in Roxburghshire and Berwickshire 1700-1815 Unpublished Ph.D. thesis, University of Liverpool
- (1969) Runrig in South-East Scotland Paper presented to the I.B.G. Agrarian Landscape Research Group conference, Carberry Tower
- (1973) The Nature and Development of Infield-Outfield in Scotland Trans.I.B.G. LIX pp.1-23
- Donaldson G. (1960) Sources for Scottish Agrarian History Before the Eighteenth Century Ag.H.R. VIII pp.82-92
- (1965) Scotland, James V - James VII Vol.III of The Edinburgh History of Scotland
- (1972) James VI and Vanishing Frontiers The Scottish Nation Ch.7
- Dunbar J.G. and (1960) Excavations at Lour, Stobo P.S.A.S. XCIV pp.196-210
- Dunbar J.G. (1966) The Historic Architecture of Scotland
- (1971) The Peasant House in Scotland in Deserted Medieval Villages ed. Beresford M. and Hunt J.G. pp.236-244
- Lord Ernle (1961) English Farming, Past and Present 6th edn.
- Elton G.R. (1969) England 1200-1640 The Sources of History series
- Fairhurst H. (1960) Scottish Clachans Part I S.G.M. LXXVI pp.67-76
- (1964) Scottish Clachans Part II S.G.M. LXXX pp.150-163
- (1967) The Archaeology of Rural Settlement in Scotland Trans.Glas.Arch.Soc. XV pp.139-158

- Fairhurst H. (1968) The Deserted Settlement at Lix, West Perthshire P.S.A.S. CI pp.160-199
- (1971) Rural Settlement in Scotland in Deserted Medieval Villages ed. Beresford M. and Hunt J.G. pp.229-235
- Farran C.D. (1955) The Principles of Scots and English Land Law
- Fenton A. (1963) The Rural Economy of East Lothian in the Seventeenth and Eighteenth Centuries Trans.East Loth.Antiq. and Field Nat.Soc. IV pp.1-23
- (1965) Plough and Spade in Dumfries and Galloway Trans.Dum.and Gall.Nat.Hist.and Antiq.Soc. XLV pp.147-184
- (1970) Paring and Burning and the Cutting of Turf and Peat in Scotland in The Spade in Northern and Atlantic Europe ed. Gailey A. and Fenton A.
- Ferguson W. (1968) Scotland, 1689 to the Present Vol.IV of The Edinburgh History of Scotland
- Finlayson W.M. (1956) Oats
- Fisher F.J. (1935) The Development of the London Food Market 1540-1640 Ec.H.R. V pp.46-64
- Franklin T.B. (1952) A History of Scottish Farming
- Fraser G.M. (1971) The Steel Bonnets: the Anglo-Scots Border Reivers
- Fullarton F. (1793) General View of the Agriculture of the County of Ayr
- Gaffney V. (1967) The Lordship of Strathavon
- Gardner H.W. and Garner H.V. (1953) The Use of Lime in British Agriculture
- Geiger R. (1965) The Climate Near the Ground
- Gilbert J. (1954) The Historical Geography of Strathmore and its Highland Boundary Zone 1100-1603 Unpublished Ph.D. thesis, University of Edinburgh
- Graham H.G. (1937) The Social Life of Scotland in the Eighteenth Century

- Grant I.F. (1930) The Social and Economic Development of Scotland Before 1603
- Haldane A.R.B. (1952) The Drove Roads of Scotland
- Hamilton H. (1963) An Economic History of Scotland in the Eighteenth Century
- Handley J.E. (1953) Scottish Farming in the Eighteenth Century
- (1963) The Agricultural Revolution in Scotland
- Hicks J.R. (1969) A Theory of Economic History
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- Jones E.L. (1967) Agriculture and Economic Growth in England 1650-1815
- Kay G. (1962) The Landscape of Improvement S.G.M. LXXVIII pp.100-111
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- Lewis W.A. (1955) The Theory of Economic Growth

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